

THE COLLINGS FOUNDATION

SITE DEVELOPMENT PLAN

137 BARTON ROAD, STOW, MASSACHUSETTS
586 MAIN STREET, HUDSON, MASSACHUSETTS
JANUARY 20, 2015

PREPARED FOR:

COLLINGS FOUNDATION, INC.
P.O. BOX 248
STOW, MA 01775

PREPARED BY:

ANDREWS SURVEY & ENGINEERING, INC.
104 MENDON STREET
P.O. BOX 312
UXBRIDGE, MA 01569
P: 508.278.3897
F: 508.278.2289

GENERAL CONTRACTOR:

J.M. COULL, INC.
20 POWDER MILL ROAD
MAYNARD, MA 01754
P: 978.461.0330
F: 978.461.0275

ARCHITECT:

AHP ARCHTECTS
20 CHELMSFORD STREET
CHELMSFORD, MA 01824
P: 978.244.1100
F: 978.244.1191

LANDSCAPE ARCHITECT:



280 BEVERLY ROAD
WORCESTER, MA 01605
P: 508.852.2644

TRAFFIC:

CONLEY ASSOCIATES, INC.
40 WARREN STREET
BOSTON, MA 02129
P: 617.742.5111
F: 617.742.5333

ENVIRONMENTAL:

GODDARD CONSULTING, LLC
14 WILSON ROAD
NORTHBOROUGH, MA 01532
P: 508.525.0726

NOTES:

1. NOTICE TO CONTRACTOR: THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION SHALL BE TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLAN.

2. PROPERTY LINE INFORMATION IS A RESULT OF PARTIAL FIELD SURVEY AND A COMPILATION OF AVAILABLE PUBLIC RECORDS.

3. TOPOGRAPHY TAKEN FROM AERIAL PHOTOGRAPHY COMPILED BY EASTERN TOPOGRAPHICS, ON APRIL 7, 2014. GROUND CONTROL PROVIDED BY ANDREWS SURVEY & ENGINEERING, INC.
DATUM: MASS. STATE PLAN NAVD88

4. MAP U-2, PARCEL 54 AND MAP R-25, PARCEL 16A OWNED BY ROBERT & CAROLINE COLLINGS TO BE CONVEYED TO COLLINGS FOUNDATION, INC. UPON APPROVAL.

OWNERS OF RECORD:
ROBERT F. & CAROLINE J. COLLINGS
137 BARTON ROAD
STOW, MA 01775

COLLINGS FOUNDATION, INC.
P.O. BOX 248
STOW, MA 01775

MAYNARD SAND & GRAVEL, INC.
C/O QUINN BROS. CORP.
3 CALDWELL DRIVE
AMHERST, NH 03031

STOW ASSESSORS INFORMATION:
MAP U-2, PARCEL 54
MAP R-25, PARCELS 13, 16A, 16B, 17
AREA: 89± ACRES

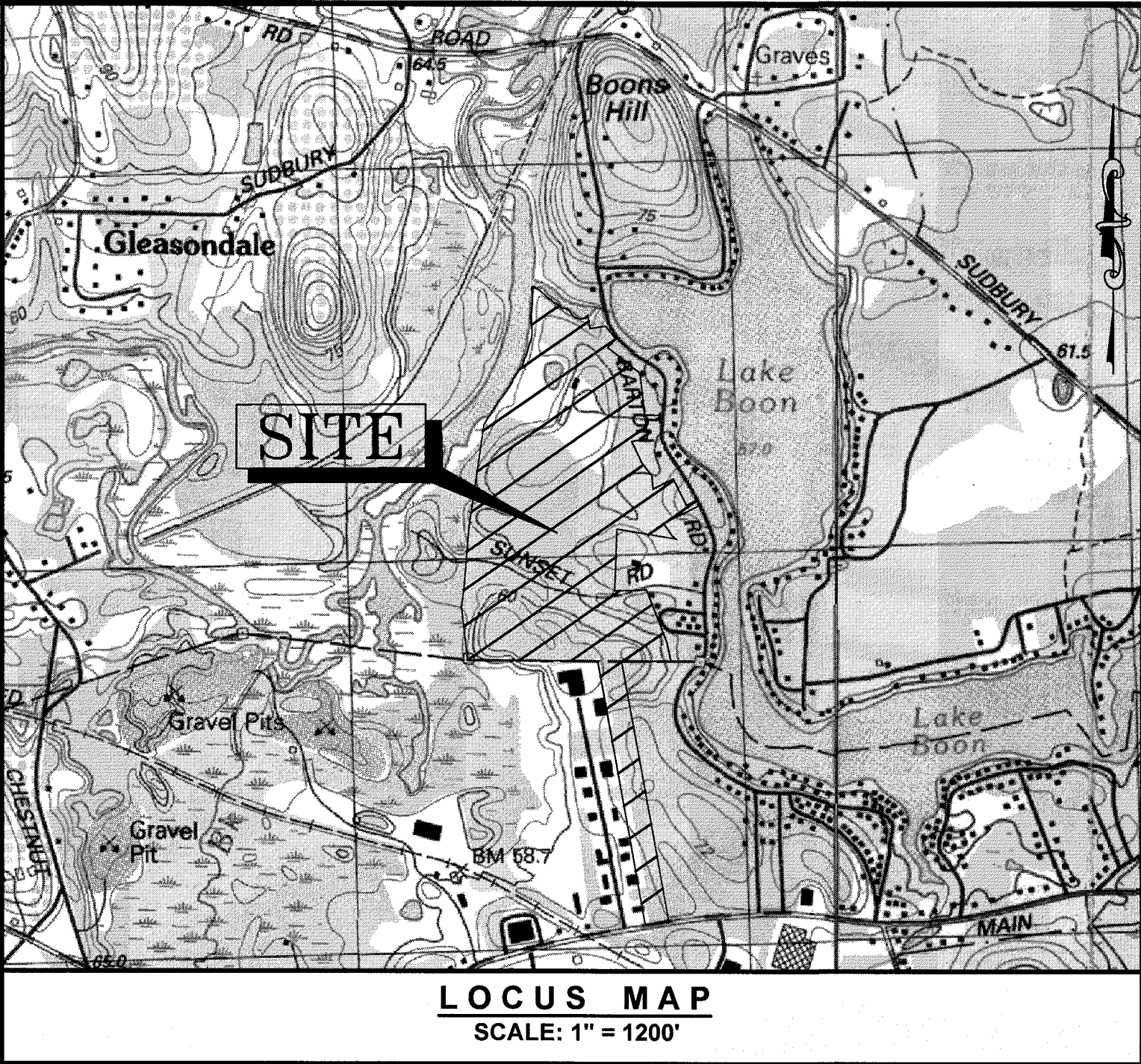
HUDSON ASSESSORS INFORMATION:
MAP 35, PARCEL 3
AREA: 10± ACRES

STOW ZONING INFORMATION:
ZONE: RESIDENTIAL DISTRICT
MINIMUM AREA: 65,340 S.F.
MINIMUM FRONTAGE: 200'
SETBACKS: FRONT 30', SIDE 25', REAR 40'

HUDSON ZONING INFORMATION:
ZONE: INDUSTRIAL (M-6)
MINIMUM AREA: 60,000 S.F.
MINIMUM FRONTAGE: 150'
SETBACKS: SIDE 20', REAR 20', 35% O.S.


DEED REFERENCES:
BK. 13361, PG. 267
BK. 55607, PG. 530
BK. 12747, PG. 438

PLAN REFERENCES:
PLAN 65 OF 1944, PLAN 1653 OF 1956
PLAN 841 OF 1977, PLAN 41 OF 1973
PLAN 434 OF 2001, PLAN 183 OF 1993



DRAWING DATE	LATEST REVISION	SHEET NO.	SHEET TITLE
1/20/15	5/18/15	C-0.0	COVER SHEET
1/20/15	5/18/15	C-1.0	SITE COMPOSITE PLAN
1/20/15	5/18/15	C-1.1	VEHICULAR & PEDESTRIAN CIRCULATION PLAN
1/20/15	5/18/15	C-2.0	OVERALL PLAN
1/20/15	5/18/15	C-2.1 - C-2.7	SITE PLANS
1/20/15	5/18/15	C-3.1 - C-3.2	EROSION & SEDIMENT CONTROL PLANS
1/20/15	5/18/15	C-3.3 - C-3.4	EROSION & SEDIMENT CONTROL NOTES
1/20/15	5/18/15	C-4.1 - C-4.2	WETLAND CROSSING & RESTORATION PLANS
1/20/15	5/18/15	L-5.0	LIGHTING PLAN
5/18/15		L-5.1 - L-5.3	LANDSCAPE PLAN
1/20/15	5/18/15	C-6.1 - C-6.3	CONSTRUCTION DETAILS
4/23/14		A.101	FIRST FLOOR PLAN
4/23/14		A.102	MEZZANINE PLAN
4/23/14		A.201	EXTERIOR ELEVATIONS
4/23/14		A.202	EXTERIOR ELEVATIONS

GOVERNMENT & UTILITY CONTACTS		
STOW PLANNING DEPARTMENT 380 GREAT ROAD P: 978.897.5098 F: 978.897.2321 ATTN: KAREN KELLEHER, TOWN PLANNER	STOW CONSERVATION COMM. 380 GREAT ROAD P: 978.897.8615 F: 978.897.4534 ATTN: KATHY SFERRA, COORDINATOR	STOW BUILDING DEPARTMENT 380 GREAT ROAD P: 978.897.2193 F: 978.897.7258 ATTN: CRAIG MARTIN, BUILDING COMM.
STOW FIRE DEPARTMENT 16 CRESCENT STREET P: 978.897.4537 F: 978.461.1400 ATTN: JOE LANDRY, CHIEF	STOW POLICE DEPARTMENT 305 GREAT ROAD P: 978.897.4545 F: 978.897.3692 ATTN: WILLIAM BOSWORTH, CHIEF	STOW HIGHWAY DEPARTMENT 88 SOUTH ACTON ROAD P: 978.897.8071 F: 978.897.5682 ATTN: MICHAEL CLAYTON, SUPT.
STOW BOARD OF HEALTH 380 GREAT ROAD P: 978.897.4592 F: 978.897.4615 ATTN: JOE WALLACE, AGENT	HUDSON PLANNING DEPARTMENT 78 MAIN STREET P: 978.562.9963 F: 978.568.9641 ATTN: JENNIFER BURKE, PLANNING DIRECTOR	HUDSON CONSERVATION COMM. 78 MAIN STREET P: 978.562.2020 F: 978.562.8508 ATTN: DEBBIE CRAIG, ADMINISTRATOR
HUDSON FIRE DEPARTMENT 296 COX STREET P: 978.562.5565 F: 978.568.9609 ATTN: JOHN M. BLOOD, CHIEF	HUDSON POLICE DEPARTMENT 62 PACKARD STREET P: 978.562.7122 F: 978.568.9660 ATTN: DAVID A. STEPHENS, CHIEF	HUDSON D.P.W. 1 MUNICIPAL DRIVE P: 978.897.8071 F: 978.897.5682 ATTN: ANTHONY MARQUES, DIRECTOR
HUDSON BUILDING DEPARTMENT 78 MAIN STREET P: 978.568.9625 F: 978.562.8508 ATTN: JEFFREY WOOD, BUILDING COMM.	HUDSON BOARD OF HEALTH 78 MAIN STREET P: 978.562.2020 F: 978.562.8508 ATTN: SAM WONG, DIRECTOR	HUDSON LIGHT AND POWER DEPT. 49 FOREST AVENUE P: 978.568.8736 F: 978.562.1389
VERIZON COMMUNICATIONS 1.800.870.9999		



Andrews Survey & Engineering, Inc.
Land Surveying - Civil Engineering - Site Planning

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APPROVAL UNDER SITE PLAN REVIEW.
STOW PLANNING BOARD

BEING A MAJORITY DATE: _____

APPROVAL UNDER SITE PLAN REVIEW.
HUDSON PLANNING BOARD

BEING A MAJORITY DATE: _____

PROJECT: THE COLLINGS FOUNDATION
SITE DEVELOPMENT PLAN
137 BARTON ROAD
STOW, MA 01775

APPLICANT: COLLINGS FOUNDATION, INC.
P.O. BOX 248
STOW, MA 01775

REVISIONS		
NO.	DATE	DESCRIPTION
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2	5/18/15	PER REVIEW COMMENTS

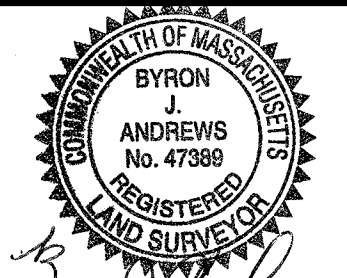
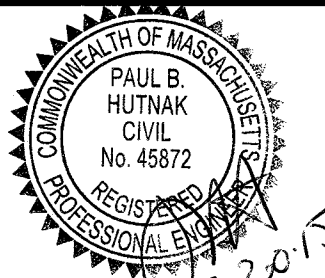
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CHECKED BY PBH

DATE JANUARY 20, 2015

PROJECT NO. 2014--021



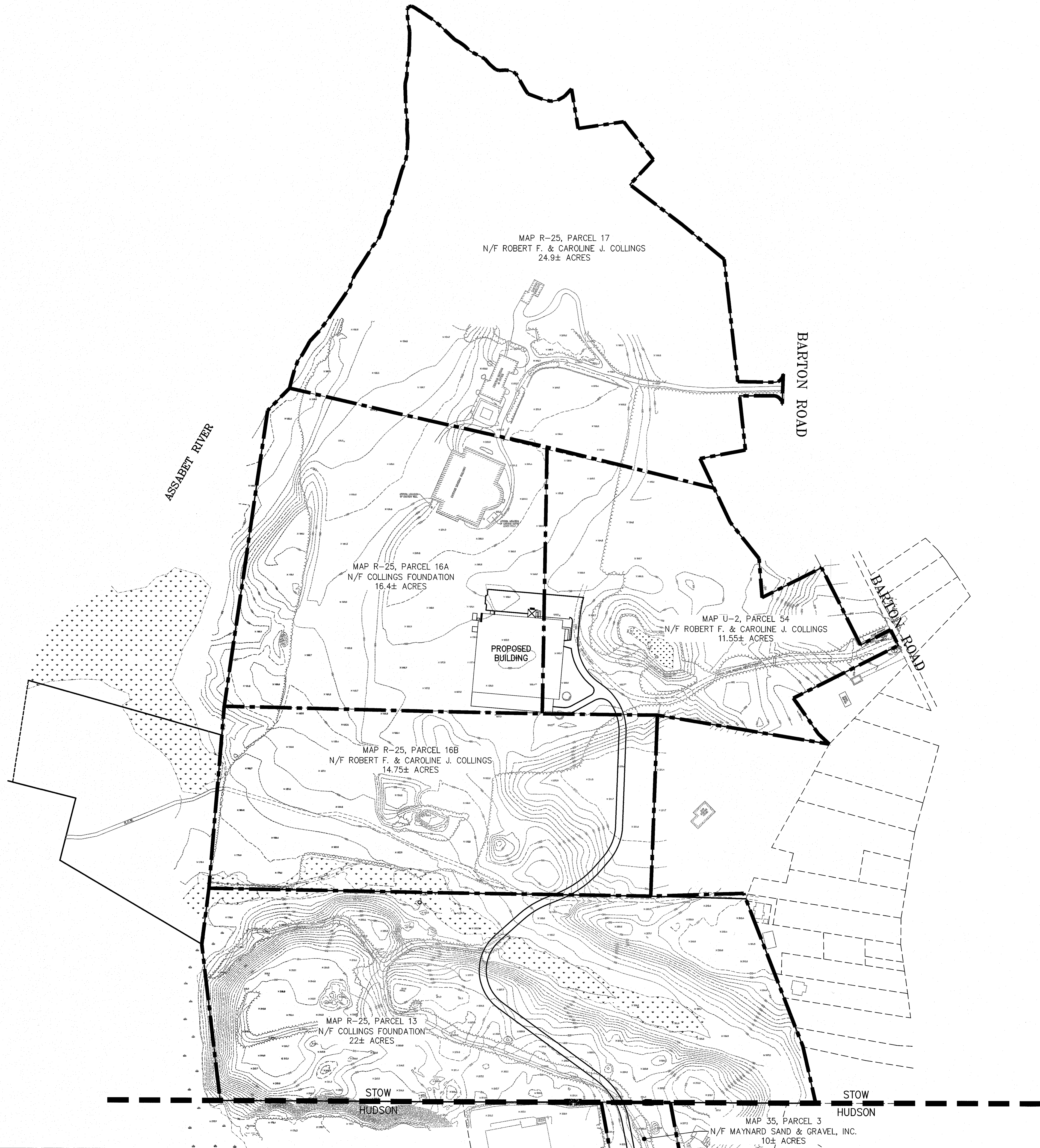
P.E. P.L.S.

SHEET TITLE

COVER SHEET

DRAWING NO. C-0.0

PLAN NO. L-4403



NOTE:
MAP R-25, PARCEL 16A AND MAP U-2,
PARCEL 54 ARE SUBJECT TO A SPECIAL
PERMIT FOR A HAMMERHEAD LOT
PURSUANT TO STOW ZONING BYLAWS.



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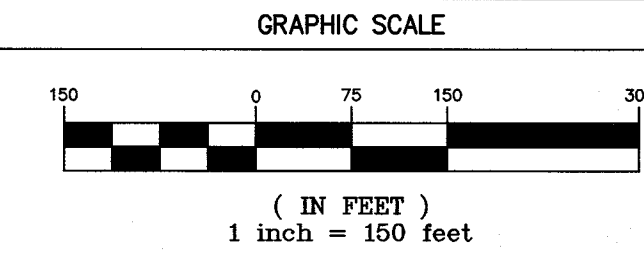
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HUDSON PLANNING BOARD

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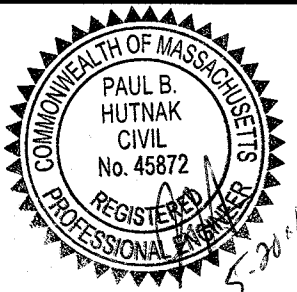
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SHEET TITLE

SITE COMPOSITE
PLAN



DRAWING NO.

C-1.0

PLAN NO. L-4403

STOW ZONING REQUIREMENTS

ZONE: RESIDENTIAL DISTRICT
MINIMUM AREA: 65,340 S.F.
MINIMUM FRONTAGE: 200'
SETBACKS: FRONT 30', SIDE 25', REAR 40'
MINIMUM OPEN SPACE (%): 10%

STOW SITE DATA

TOTAL SITE AREA: 89± ACRES
TOTAL BUILDING AREA: 2.46 ACRES± = 2.8%
TOTAL OPEN SPACE: 65 ACRES± = 73.0%

MUSEUM PARKING REQUIRED:

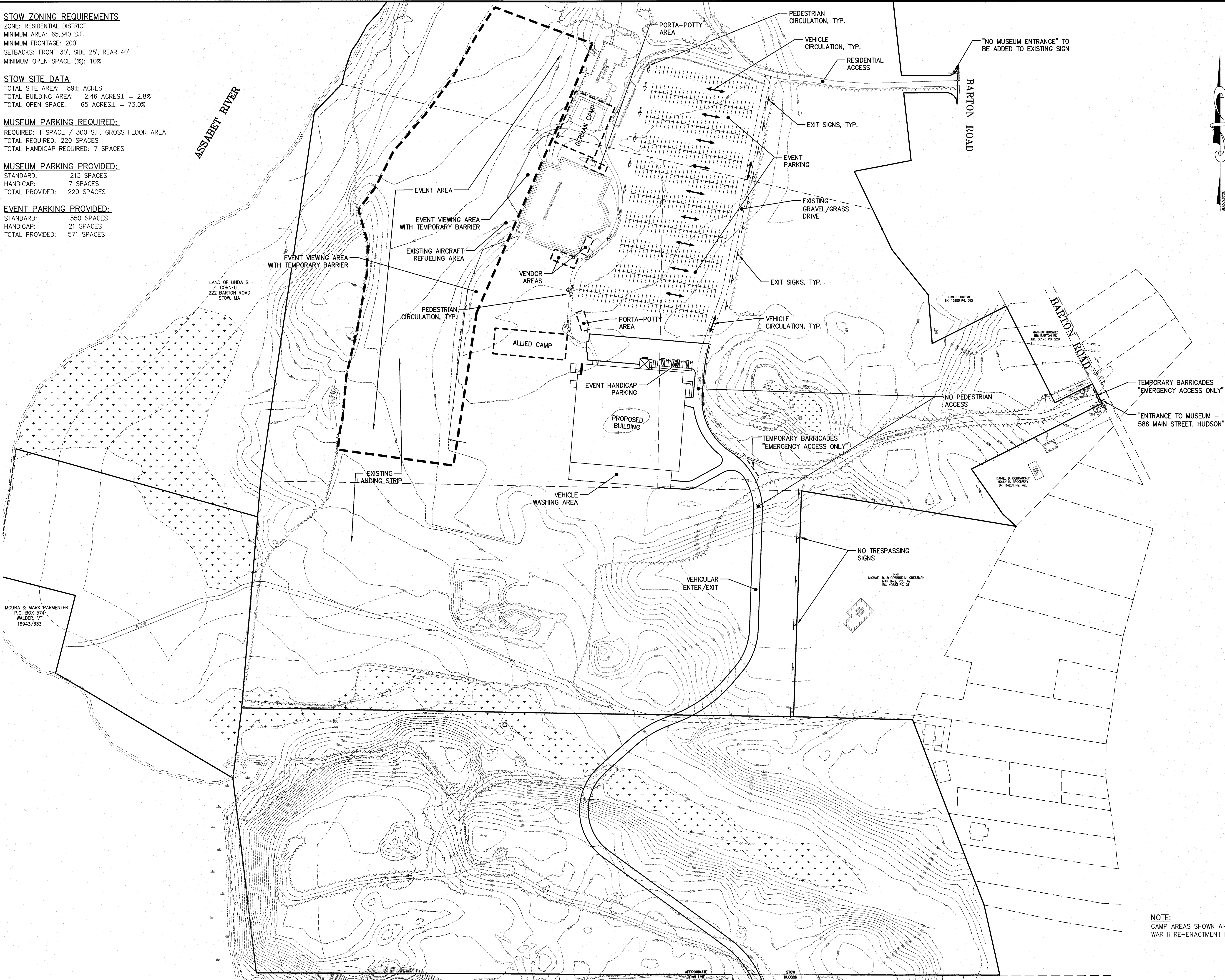
REQUIRED: 1 SPACE / 300 S.F. GROSS FLOOR AREA
TOTAL REQUIRED: 220 SPACES
TOTAL HANDICAP REQUIRED: 7 SPACES

MUSEUM PARKING PROVIDED:

STANDARD: 213 SPACES
HANDICAP: 7 SPACES
TOTAL PROVIDED: 220 SPACES

EVENT PARKING PROVIDED:

STANDARD: 550 SPACES
HANDICAP: 21 SPACES
TOTAL PROVIDED: 571 SPACES



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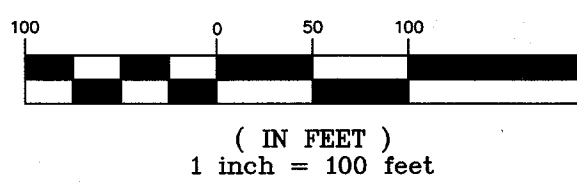
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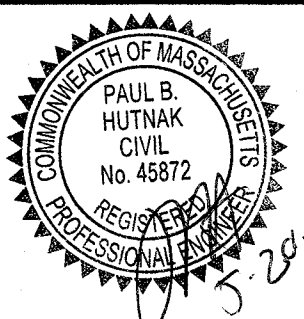
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PROJECT NO.	2014-021

GRAPHIC SCALE



SHEET TITLE

VEHICULAR &
PEDESTRIAN
CIRCULATION PLAN

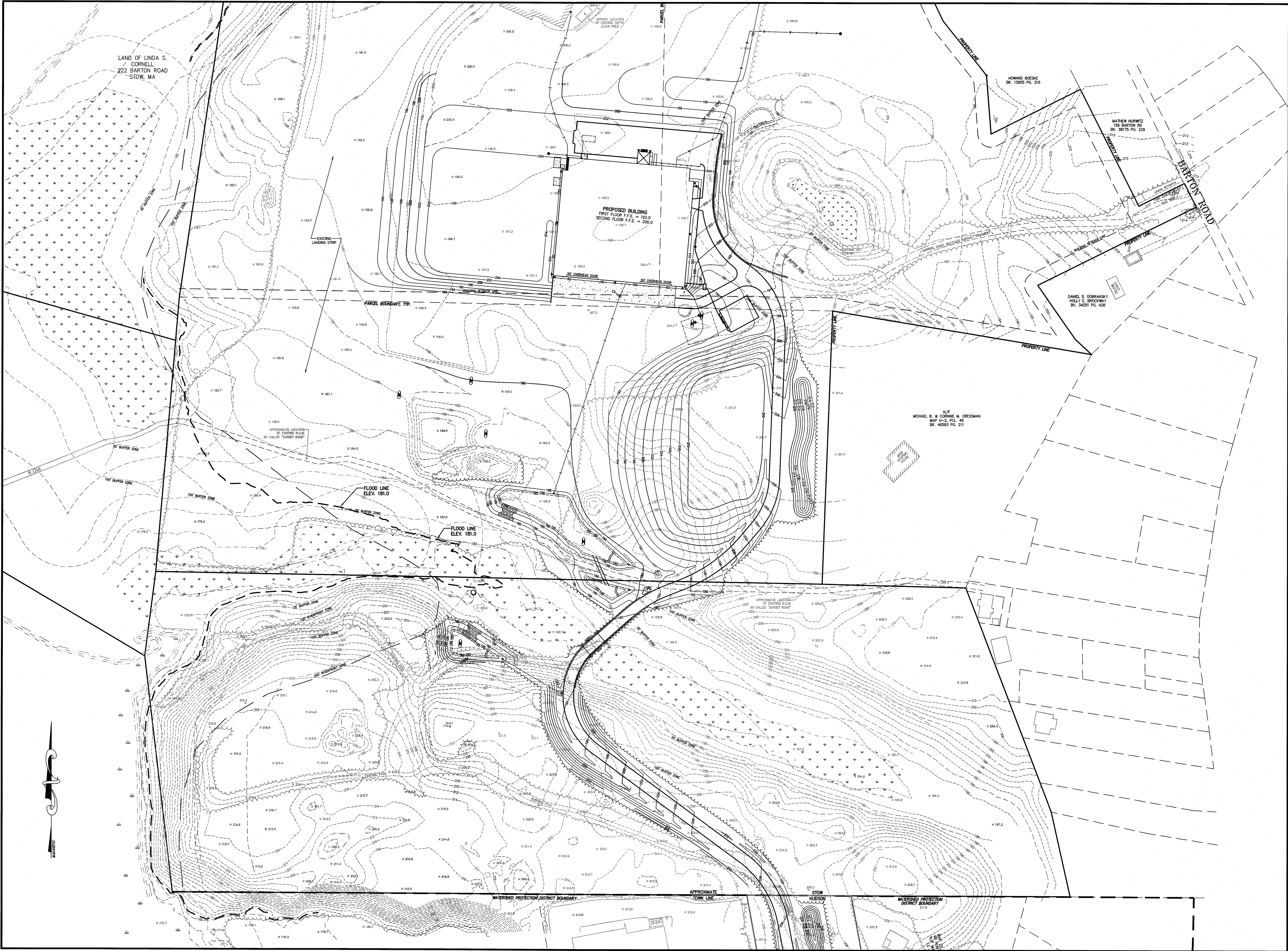


DRAWING NO.

C-1.1

PLAN NO. L-4403

NOTE:
CAMP AREAS SHOWN ARE FOR WORLD
WAR II RE-ENACTMENT EVENT ONLY.



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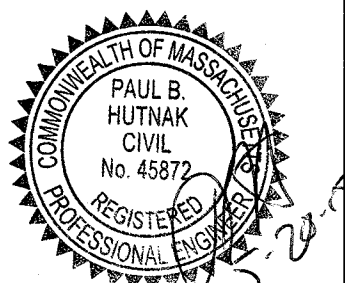
GRAPHIC SCALE



(IN FEET)
1 inch = 80 feet

SHEET TITLE

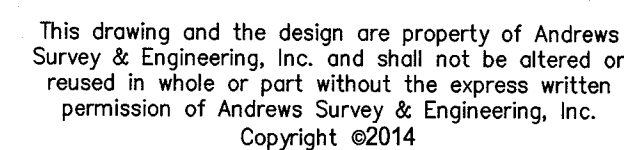
OVERALL PLAN



DRAWING NO.

C-2.0

PLAN NO. L-4403

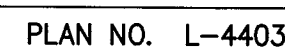


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COLLINGS FOUNDATION, INC.
P.O. BOX 248
STOW, MA 01775

SHEET TITLE	
SITE PLAN	
SHEET 1 OF 7	



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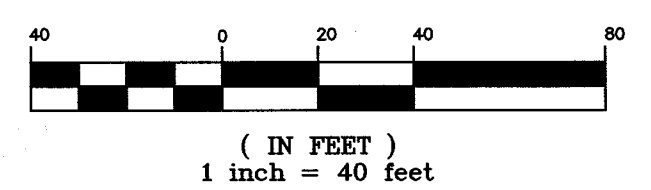
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CHECKED BY	PBH
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DATE	JANUARY 20, 2015
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PROJECT NO.	2014-021
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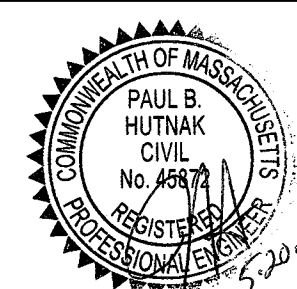
GRAPHIC SCALE



SHEET TITLE

SITE PLAN

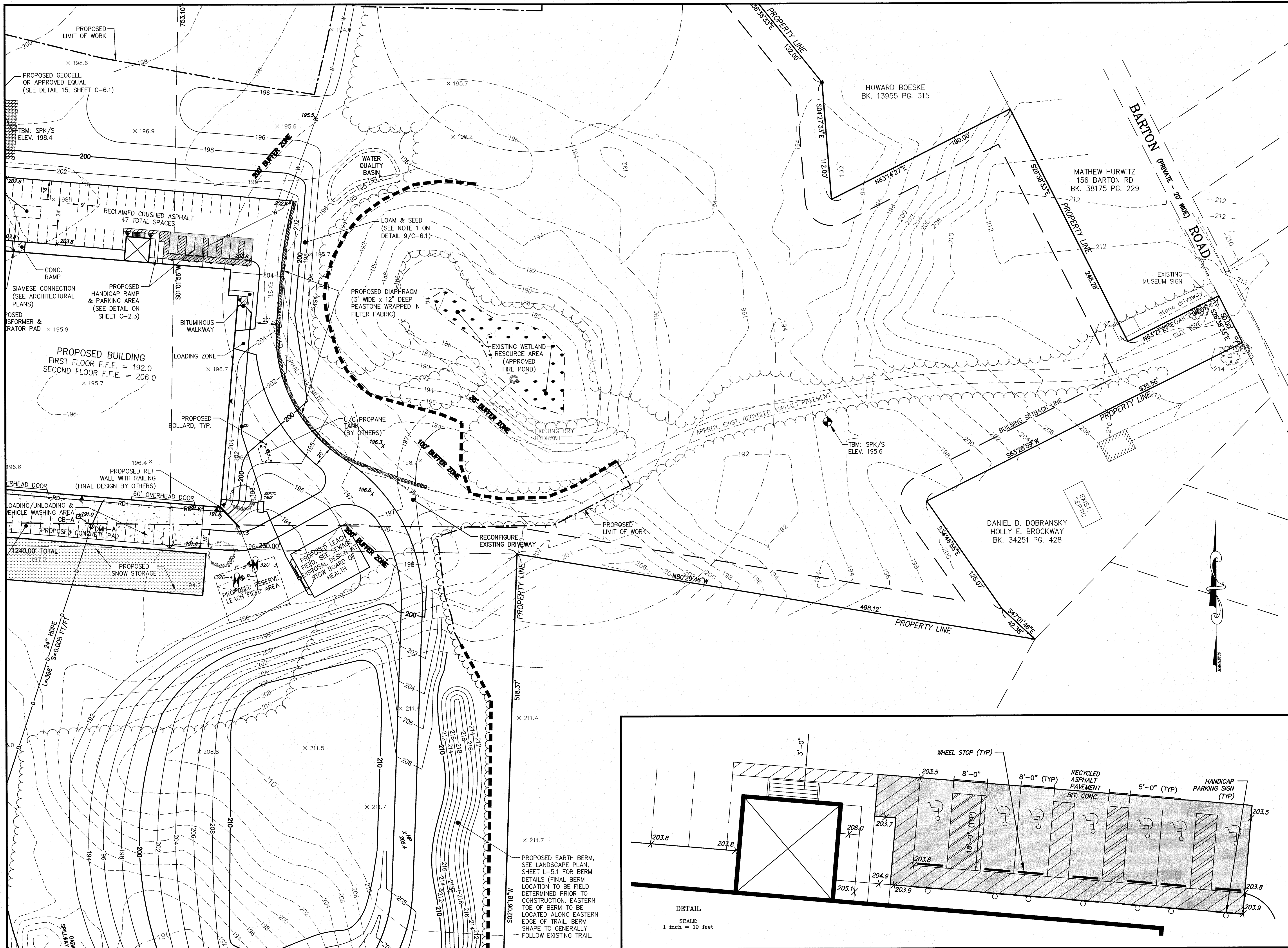
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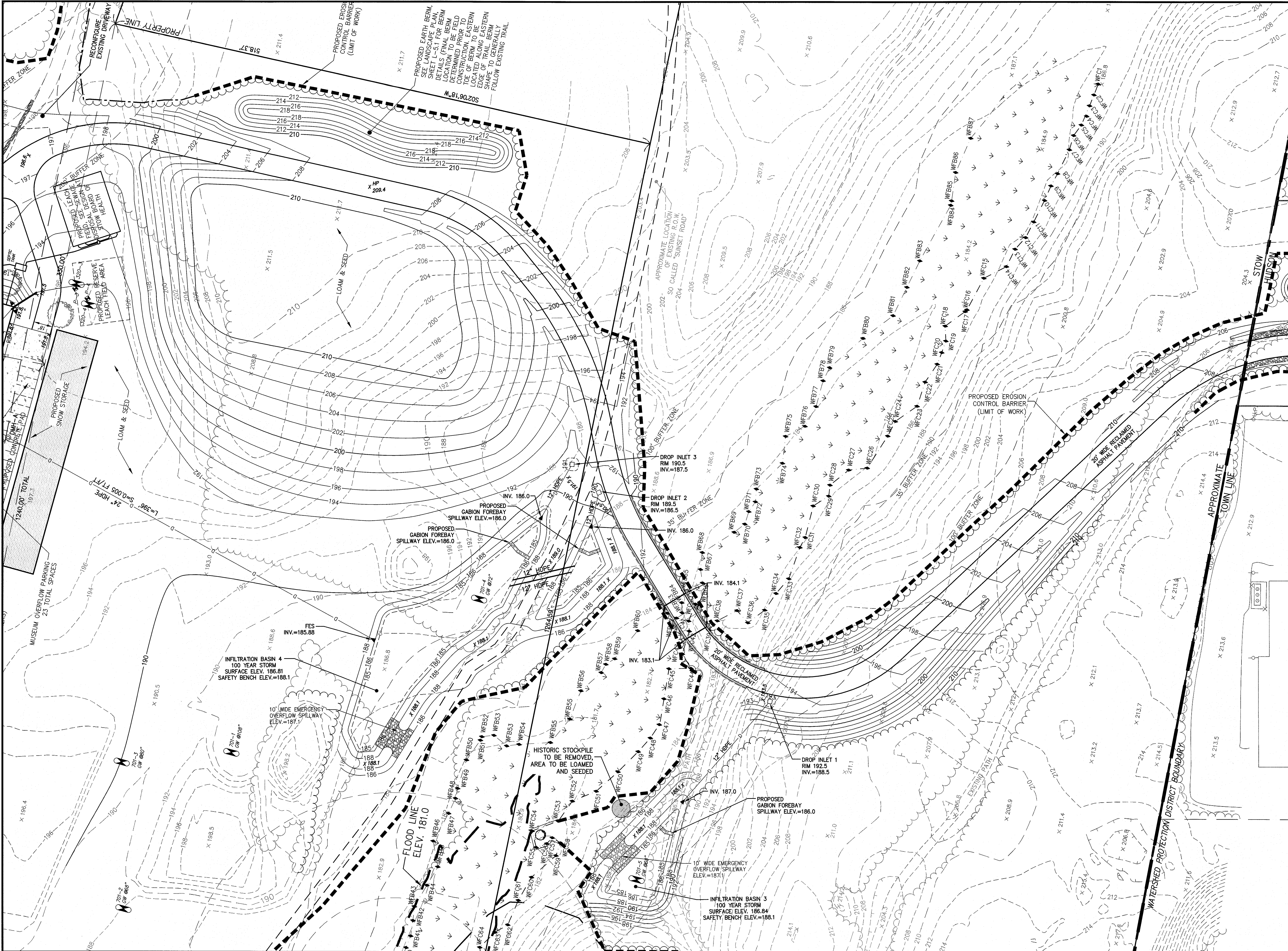


DRAWING NO.

C-2.3

PLAN NO. L-4403





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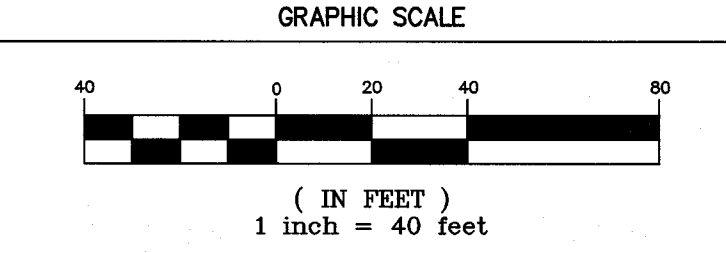
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SHEET TITLE

SITE PLAN
SHEET 4 OF 7

DRAWING NO.
C-2.4
PLAN NO. L-4403

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PROJECT NO.	2014-021

GRAPHIC SCALE

(IN FEET)
1 inch = 40 feet

SHEET TITLE

SITE PLAN

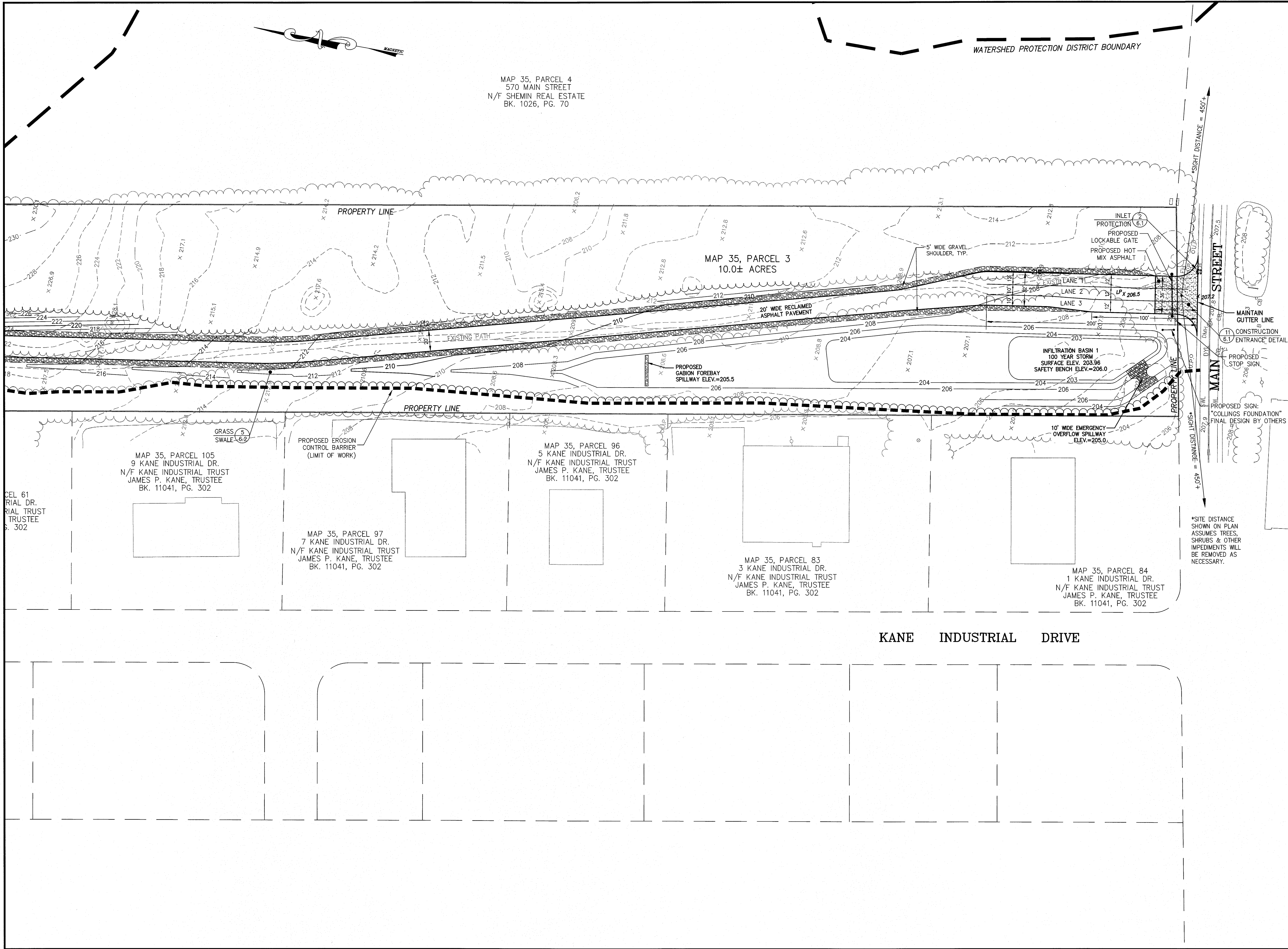
SHEET 5 OF 7



DRAWING NO.

C-2.5

PLAN NO. L-4403



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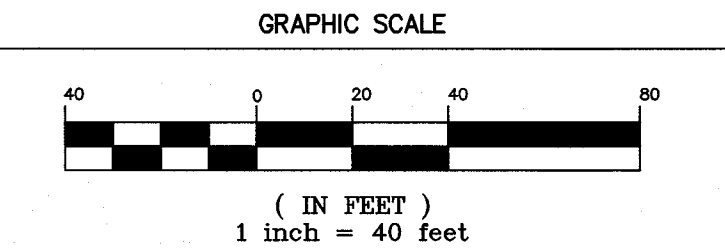
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HUDSON PLANNING BOARD

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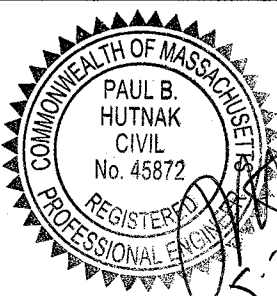
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SHEET TITLE

SITE PLAN

SHEET 6 OF 7



DRAWING NO.

C-2.6

PLAN NO. L-4403

DRAIN SCHEDULE

CB1	DMH1
RIM 203.20	RIM 203.30
INV. OUT 200.17	INV. IN 199.51 (CB1)
CB2	INV. IN 199.51 (CB2)
RIM 203.20	INV. IN 199.51 (CB3)
INV. OUT 199.61	INV. OUT 199.41 (CULTEC)
CB3	DMH2
RIM 203.20	RIM 203.50
INV. IN 199.51 (CB4)	INV. IN 198.92 (CB4)
INV. OUT 200.17	INV. IN 198.92 (CB5)
CB4	INV. OUT 198.82 (DMH3)
RIM 202.90	DMH3
INV. OUT 199.09	RIM 203.50
CB5	INV. IN 198.11 (DMH2)
RIM 202.20	INV. IN 198.11 (CB6)
INV. OUT 199.12	INV. OUT 198.01 (CULTEC)
CB6	DMH4
RIM 203.50	RIM 202.80
INV. OUT 198.01	INV. IN 198.15 (DMH5)
CB7	INV. IN 198.15 (CB7)
RIM 202.10	INV. OUT 198.05 (CULTEC)
INV. OUT 198.38	DMH5
CB8	RIM 202.70
RIM 201.90	INV. IN 198.61 (CB8)
INV. OUT 198.77	INV. OUT 198.51 (DMH4)
CB-A	DMH-A
RIM 191.00	RIM 191.20
INV. OUT 188.00	INV. IN 188.04 (ROOF DRAIN)
	INV. IN 187.95 (CB9)
	INV. OUT 187.85 (FES)

PIPE SCHEDULE

NAME	SIZE/TYPE	LENGTH	SLOPE
D1	12" HDPE	66'	1.00%
D2	12" HDPE	3.5'	2.00%
D3	12" HDPE	66'	1.00%
D4	12" HDPE	74'	1.00%
D5	12" HDPE	272'	1.10%
D6	12" HDPE	34'	0.50%
D7	12" HDPE	39.6'	0.51%
D8	12" HDPE	70.5'	1.01%
D9	12" HDPE	38'	0.50%
D10	12" HDPE	46'	0.50%
D11	12" HDPE	71'	0.51%
D12	12" HDPE	31'	0.52%
D13	12" HDPE	190'	1.52%

TOTAL MUSEUM PARKING REQUIRED:

MUSEUM GROSS FLOOR AREA: 105,500 S.F.
REQUIRED: 1 SPACE / 300 S.F. GROSS FLOOR AREA
TOTAL REQUIRED: 352 SPACES
TOTAL HANDICAP REQUIRED: 7 SPACES

TOTAL MUSEUM PARKING PROVIDED:

STANDARD: 346 SPACES
HANDICAP: 7 SPACES
TOTAL PROVIDED: 353 SPACES

PARKING AREA LANDSCAPING DATA:

TOTAL PARKING AREA: 109,223 S.F.
INTERIOR LANDSCAPED ISLANDS (MIN. 10%): 12,419 S.F. (11.4%)

SHADE TREES REQUIRED: 1 TREE/10 PARKING SPACES
353 PARKING SPACES/10 PARKING SPACES = 35.3
SHADE TREES PROVIDED: 36 SHADE TREES



Andrews Survey & Engineering, Inc.
Land Surveying - Civil Engineering - Site Planning

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Uxbridge, Massachusetts 01569-0312
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STOW PLANNING BOARD

BEING A MAJORITY DATE:

APPROVAL UNDER SITE PLAN REVIEW.
HUDSON PLANNING BOARD

BEING A MAJORITY DATE:

THE COLLINGS FOUNDATION
SITE DEVELOPMENT PLAN
137 BARTON ROAD
STOW, MA 01775

COLLINGS FOUNDATION, INC.
P.O. BOX 248
STOW, MA 01775

PROJECT:

APPLICANT:

REVISIONS

NO.	DATE	DESCRIPTION
1	4/22/15	PER REVIEW COMMENTS
2	5/18/15	PER REVIEW COMMENTS

CAD FILE ...\\dwg\2014-021_SP-R6.dwg

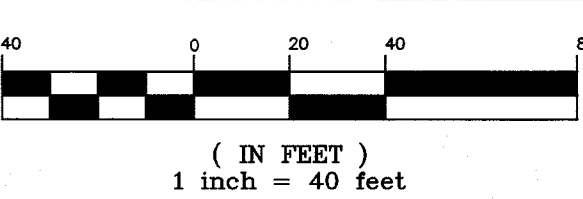
DRAWN BY TRB, SJO

CHECKED BY PBH

DATE JANUARY 20, 2015

PROJECT NO. 2014-021

GRAPHIC SCALE



SHEET TITLE

SITE PLAN FOR FULL
SITE BUILD-OUT

SHEET 7 OF 7

DRAWING NO.

C-2.7

PLAN NO. L-4403





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NO.	DATE	DESCRIPTION
1	4/22/15	PER REVIEW COMMENTS
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CAD FILE: ...\\dwg\2014-021_SP-R6.dwg

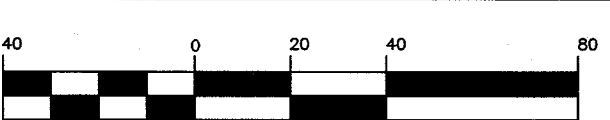
DRAWN BY: TRB, SJO

CHECKED BY: PBH

DATE: JANUARY 20, 2015

PROJECT NO.: 2014-021

GRAPHIC SCALE



(IN FEET)
1 inch = 40 feet

SHEET TITLE

EROSION & SEDIMENT CONTROL PLAN

SHEET 1 OF 4

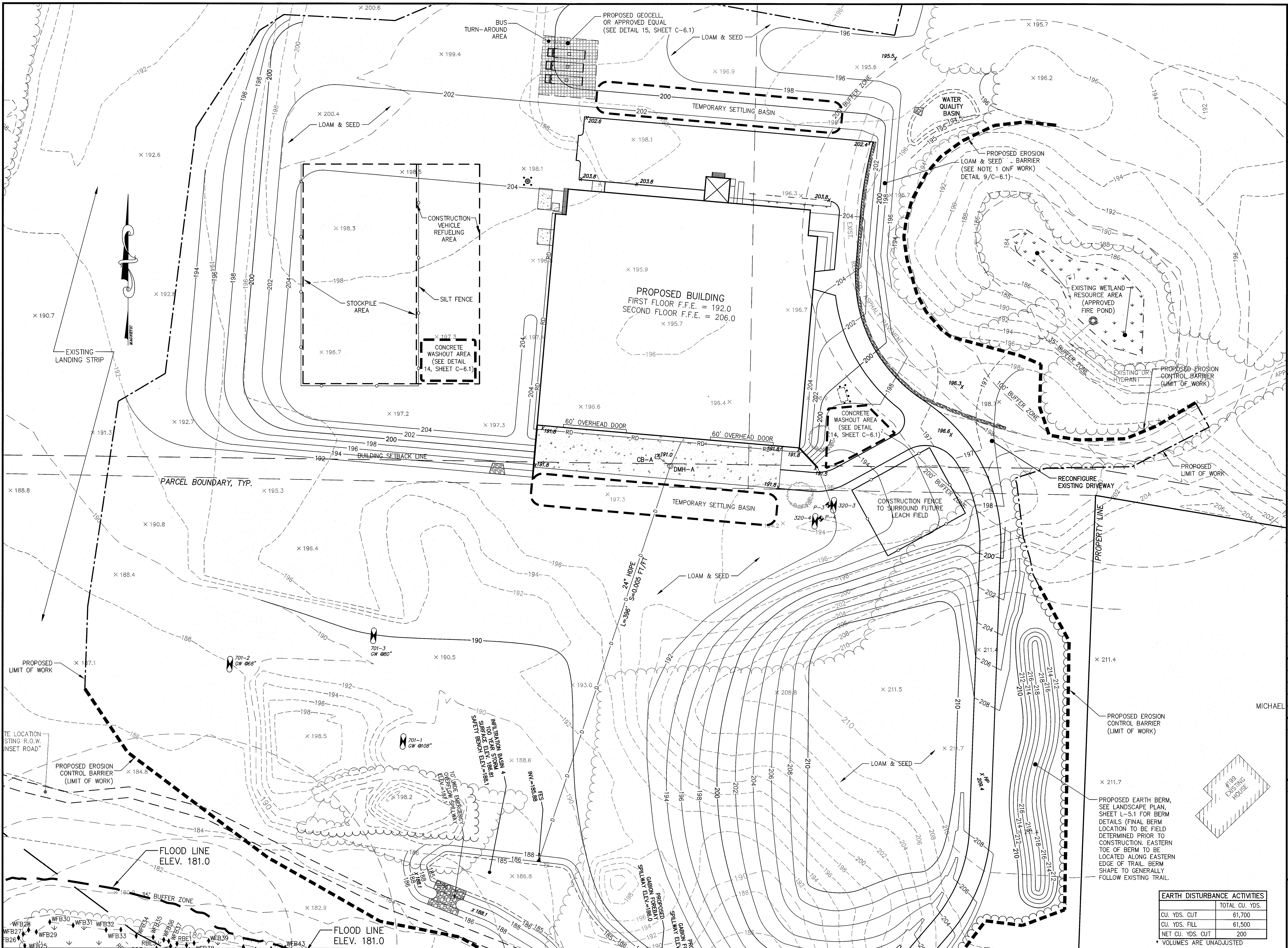
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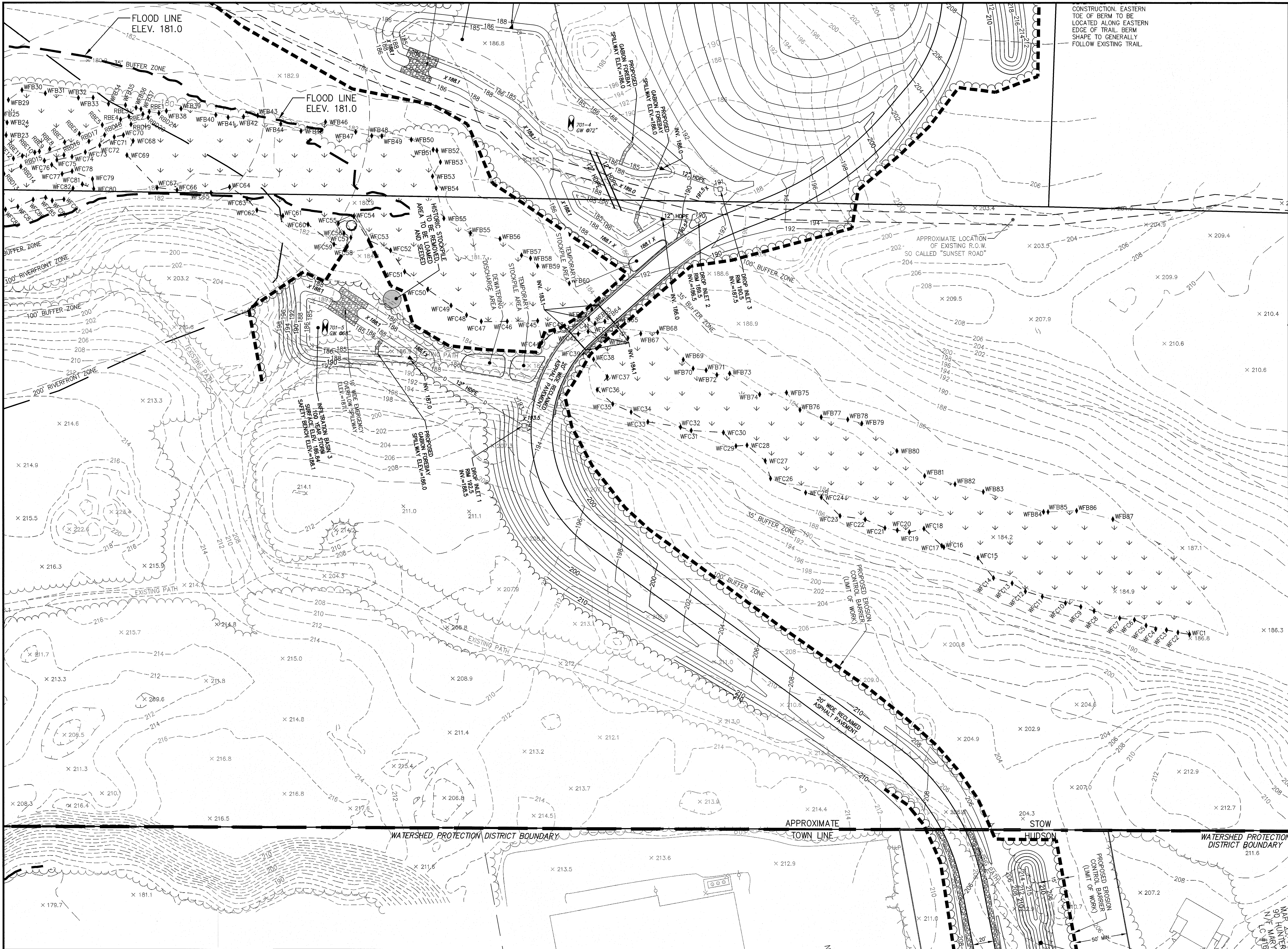
C-3.1

PLAN NO. L-4403

EARTH DISTURBANCE ACTIVITIES	
	TOTAL CU. YDS.
CU. YDS. CUT	61,700
CU. YDS. FILL	61,500
NET CU. YDS. CUT	200

* VOLUMES ARE UNADJUSTED





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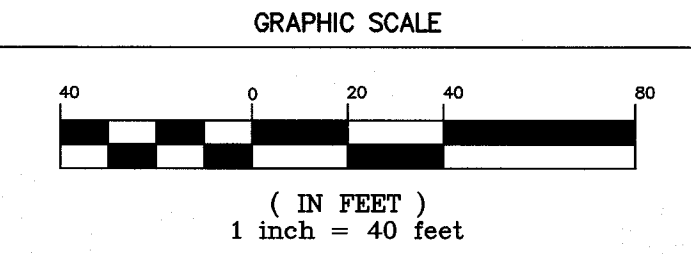
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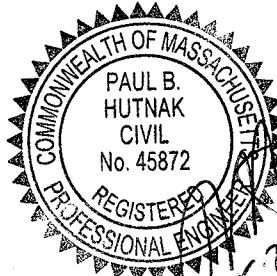
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CHECKED BY	PBH
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PROJECT NO.	2014-021



SHEET TITLE

EROSION & SEDIMENT
CONTROL PLAN

SHEET 2 OF 4



DRAWING NO.
C-3.2
PLAN NO. L-4403

EROSION AND SEDIMENT CONTROL REQUIREMENTS

PART 1 – GENERAL

1.01 SUMMARY

A. FURNISH, INSTALL, AND MAINTAIN TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL MEASURES, SUCH AS, BUT NOT NECESSARILY LIMITED TO, STRAW BALE AND SILT FENCE BARRIERS, RIPRAP, VEHICLE TRACKING PADS, DIVERSION CHANNELS AND BERMS, CHECK DAMS, STRATEGICALLY LOCATED STOCKPILES, SEDIMENT BASINS, MULCH, AND SEED MIX (HEREINAFTER "CONTROL MEASURES") ADEQUATE TO PREVENT THE CONVEYANCE OF EROSION PRODUCTS (E.G. SOIL, MULCH, SOD) OFF SITE, OR INTO ENVIRONMENTALLY SENSITIVE AREAS, OR INTO AREAS WHERE WORK WILL BE ADVERSELY IMPACTED. ENVIRONMENTALLY SENSITIVE AREAS INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, WETLANDS, TRIBUTARIES TO WETLANDS, WETLAND BUFFER ZONES, INTERMITTENT AND PERENNIAL STREAMS / RIVERS, AND THEIR ATTENDANT BUFFER ZONES.

ALL METHODS AND MATERIALS USED FOR EROSION CONTROL SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN "EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS A GUIDE FOR PLANNERS, DESIGNERS, AND MUNICIPAL OFFICIALS" AS PUBLISHED BY THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION, BUREAU OF RESOURCE PROTECTION, UNLESS OTHERWISE APPROVED IN WRITING.

1. REFER TO DRAWINGS FOR LOCATION AND DETAILS OF LIMITS OF DISTURBANCE AND CONTROL MEASURES REQUIRED TO COMMENCE WORK. LIMITS OF DISTURBANCE SHALL BE MARKED WITH TAPE, SIGNS, OR ORANGE CONSTRUCTION FENCE PRIOR TO COMMENCING ANY LAND DISTURBANCE ACTIVITIES. CONTROL MEASURES WILL BE ADEQUATE ONLY FOR VEGETATION CLEARING. THE DRAWINGS ARE NOT INTENDED TO GRAPHICALLY DEPICT ALL CONTROL MEASURES THAT WILL BE REQUIRED TO MEET THE REQUIREMENTS DESCRIBED IN 1.01.A.

2. DEVISE AND EMPLOY CONTROL MEASURES THROUGHOUT THE DURATION OF PROJECT, OVER ALL AREAS DISTURBED OR UNDISTURBED BY CONSTRUCTION, AS NECESSARY TO MEET THE REQUIREMENTS DESCRIBED IN 1.01.A.

3. DEVISE AND EMPLOY TEMPORARY CONTROL MEASURES AS NECESSARY TO MEET THE REQUIREMENTS DESCRIBED IN 1.01.A, WHILE ALLOWING WORK TO PROCEED IN AN EFFICIENT, COST EFFECTIVE MANNER.

4. DEVISE, EMPLOY AND MAINTAIN CONTROL MEASURES UNTIL SUCH TIME AS THE ENTIRE SITE IS PERMANENTLY STABILIZED BY ESTABLISHED VEGETATION, FINISH LANDSCAPE MATERIALS, PAVED SURFACES, AND/OR ROOF AREA.

5. ONCE THE SITE IS PERMANENTLY STABILIZED AND CERTIFIED AS SUCH BY ENGINEER, REMOVE TEMPORARY CONTROL MEASURES WHILE PROTECTING STABILIZED SURFACES.

1.02 SUBMITTALS

A. SUBMIT PRODUCT DATA, WARRANTY, AND TEST REPORTS AS INDICATED ON THE DRAWINGS.

B. SUBMIT SKETCH SHOWING LOCATIONS OF PROPOSED STOCKPILE AREAS, CONSTRUCTION ENTRANCES AND EROSION CONTROLS IF NOT SHOWN ON THE SITE PLAN OR DIFFERENT FROM THOSE LOCATIONS SHOWN ON THE SITE PLAN.

C. A SITE SPECIFIC SEQUENCE OF CONSTRUCTION FOR EACH PORTION OF THE SITE, NO PORTION OF THE SITE SHALL EXCEED FIVE (5) ACRES.

1.03 QUALITY ASSURANCE

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS FROM ACCEPTABLE MANUFACTURERS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. CONFORM TO CONDITIONS OF APPROVAL ISSUED BY REGULATORY AGENCIES INCLUDING, BUT NOT NECESSARILY LIMITED TO, LOCAL PLANNING BOARD, CONSERVATION COMMISSION, CITY COUNCIL, BOARD OF HEALTH, PUBLIC WORKS / HIGHWAY DEPARTMENT, STATE ENVIRONMENTAL PROTECTION DEPARTMENT, AND U.S. GOVERNMENT, ENVIRONMENTAL PROTECTION AGENCY. WHERE CONDITIONS OF REGULATORY APPROVAL DIFFER FROM REQUIREMENTS CONTAINED HEREIN OR ON THE DRAWINGS, COMPLY WITH THE MORE STRINGENT REQUIREMENT.

PART 2 – PRODUCTS

2.01 MATERIALS

A. STRAW BALES: WEED FREE DRY GRASS OR STRAW, MACHINE BOUND WITH JUTE OR WIRE, APPROXIMATE SIZE EACH BALE 42" X 16" X 16". EACH BALE SHALL BE STACKED WITH A MINIMUM OF TWO 24" LONG HARDWOOD STAKES. NOTE: STRAW SHALL NOT BE USED.

B. STRAW WATTLES: NORTH AMERICAN GREEN MODEL WS1210 OR APPROVED EQUAL.

C. SILT FENCE: NON-WOVEN, UV-RESISTANT, POLYPROPYLENE FABRIC, FLOW RATED AT 10 GPM/SF MINIMUM, GRAB TENSILE RATED AT 124 POUNDS MINIMUM, WITH INTEGRAL STAKE LOOPS, AND HARDWOOD STAKES. USE NO. 2130 BY AMOCO FABRICS & FIBERS, OR APPROVED EQUAL.

D. MULCH: ORGANICS INCLUDING STRAW, PROCESSED PINE / HEMLOCK TWIGS AND NEEDLES.

E. SEED MIXES: SHALL MEET THE REQUIREMENTS OF MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST EDITION SECTION 6.03.0 OR 6.03.1 AS APPROPRIATE.

F. EXCELSIOR BLANKET: CURLED WOOD FIBER ON PHOTODEGRADABLE EXTRUDED PLASTIC MATRIX, 80% OF FIBERS 6-INCHES LONG OR LONGER, WEIGHT 0.975 POUNDS / SY, CONTAINING NO CHEMICAL ADDITIVES. USE CURLEX I BLANKET BY AMERICAN EXCELSIOR COMPANY, OR APPROVED EQUAL.

G. ROCK RIPRAP: SOUND, ANGULAR, 6-INCH MINUS PROCESSED ROCK, BLAST ROCK, OR TAILINGS.

H. CRUSHED STONE: SOUND, ANGULAR, 2-INCH MINUS PROCESSED CRUSHED STONE.

PART 3 – EXECUTION

3.01 THROUGHOUT CONSTRUCTION

A. DEVISE WORK SEQUENCE SO AS TO LIMIT DRAINAGE AREA THAT IS TRIBUTARY TO DISTURBED AREAS. DEVISE, EMPLOY, AND MAINTAIN CONTROL MEASURES SUCH AS DIVERSION CHANNELS AND BERMS, STRATEGICALLY LOCATED STOCKPILES, AND SEDIMENT BASINS TO SUBDIVIDE DRAINAGE AREAS INTO SMALL, MANAGEABLE SUBAREAS, THEREBY MINIMIZING RUNOFF AND THE POTENTIAL FOR EROSION.

B. MAINTAIN BARRIER AT LIMIT OF WORK AND PROTECT EXISTING VEGETATION / FACILITIES OUTSIDE OF LIMIT OF WORK.

C. MAINTAIN SPARE MATERIAL STOCKPILES FOR IMMEDIATE EMPLOYMENT / REPAIR / EXPANSION OF CONTROL MEASURES. AT A MINIMUM, SUCH MATERIALS SHALL INCLUDE STRAW BALES, SILT FENCE AND STAKES, AND CRUSHED STONE.

D. INSPECT AND MAINTAIN EFFECTIVENESS OF CONTROL MEASURES BY REPAIRING AS NECESSARY TO ENSURE INTENDED FUNCTION; BY SUPPLEMENTING AS NECESSARY FOR ADEQUATE EXTENT; BY REMOVING TRAPPED PRODUCTS OF EROSION AS NECESSARY TO MAINTAIN EFFECTIVE TRAP VOLUME.

E. LIMIT EXTENT OF WORK AREA SO THAT ALL DISTURBED AREAS CAN BE STABILIZED WITH CONTROL MEASURES WITHIN A 24-HOUR PERIOD.

F. INSTALL CONTROL MEASURES AS SOON AS PRACTICABLE AFTER EACH MANAGEABLE PORTION OF EARTHWORK IS COMPLETE. EMPLOY TEMPORARY MEASURES AS NECESSARY TO STABILIZE DISTURBED AREAS, EVEN WHERE SUBSEQUENT CONSTRUCTION OPERATIONS MAY REQUIRE RE-DISTURBANCE.

PART 3 – CONTINUED

G. WHEN INTENSE RAINFALL IS EXPECTED, CONSIDER, DEVISE, AND EMPLOY REINFORCING CONTROL MEASURES PRIOR TO THE RAINFALL EVENT TO MEET THE REQUIREMENTS DESCRIBED IN 1.01.A. IF NECESSARY, EMPLOY TEMPORARY CONTROL MEASURES ON MATERIAL STOCKPILES TO COUNTERACT POTENTIAL SEDIMENT TRANSPORT DURING INTENSE RAINFALL.

H. WHEN VEHICLE REFUELING IS REQUIRED ON SITE, CONDUCT REFUELING OPERATIONS OUTSIDE OF ENVIRONMENTALLY SENSITIVE AREAS. SPILL KITS SHALL BE AVAILABLE ON SITE FOR THE DURATION OF CONSTRUCTION.

I. PROPERLY DISPOSE OF DEBRIS, SOLID WASTE, TRASH, AND CONSTRUCTION WASTE / BYPRODUCTS OFF SITE.

J. SWEEP ON-SITE PAVED AREAS AND OFF-SITE STREETS AS NECESSARY TO PREVENT SILT AND DEBRIS ORIGINATING ON SITE FROM ENTERING CLOSED DRAINAGE SYSTEMS AND / OR ENVIRONMENTALLY SENSITIVE AREAS. WHEN NECESSARY UTILIZE WATER SPRAYING, SURFACE ROUGHENING AND/OR APPLY POLYMERS, SPRAY-ON TACKIFIERS, CHLORIDES AND BARRIERS FOR DUST CONTROL.

K. INSPECT EROSION CONTROLS DAILY THROUGHOUT CONSTRUCTION REPAIR DAMAGED CONTROLS IMMEDIATELY.

3.02 SITE PREPARATION AND ACCESS

A. WALK SITE AND IDENTIFY LOCATIONS OF LIMIT OF WORK AND ENVIRONMENTALLY SENSITIVE AREAS. ESTABLISH CONSTRUCTION STAGING AREA, LOCATED BEYOND ENVIRONMENTALLY SENSITIVE AREAS.

B. INSTALL CONTROL MEASURES AS SHOWN ON THE DRAWINGS, INCLUDING THOSE DEFINING THE LIMIT OF WORK.

C. LIMIT VEHICULAR TRAFFIC TO AND FROM SITE TO MINIMIZE TRANSPORT OF SEDIMENT.

3.03 CLEARING, GRUBBING, AND STRIPPING

A. SCHEDULE GRUBBING AND STRIPPING TO OCCUR IMMEDIATELY PRIOR TO EARTH DISTURBANCE. DEPENDING ON SITE AREA, CONSIDER MULTIPLE GRUBBING PHASES, SEQUENCED TO TAKE ADVANTAGE OF THE EROSION PREVENTION POTENTIAL OF EXISTING VEGETATIVE COVER.

B. MINIMIZE THE AREA OF EXISTING VEGETATION REMOVED WHEREVER POSSIBLE. NO GREATER THAN FIVE (5) ACRES SHALL BE UNSTABLE AT ANY TIME.

C. LOCATE AND SIZE STOCKPILES TO MINIMIZE EROSION POTENTIAL, TAKING ADVANTAGE OF TERRAIN SLOPE AND ASPECT, WHERE APPROPRIATE.

D. PROTECT VEGETATION, INCLUDING ROOT SYSTEMS, BEYOND LIMIT OF CLEARING.

E. PROCESS TIMBER, STUMPS, SLASH, AND BRUSH SO AS TO PROTECT ENVIRONMENTALLY SENSITIVE AREAS AND INSTALLED CONTROL MEASURES. PROPERLY DISPOSE OF EXCESS OFF SITE. BURIAL OF STUMPS ON SITE IS PROHIBITED.

3.04 EXCAVATION FOR BUILDING FOUNDATIONS AND UTILITIES

A. DEVISE AND INSTALL CONTROL MEASURES ADEQUATE TO HANDLE DISCHARGES AND TRAP SEDIMENT FROM FOOTING SUMP AND WELL PUMPS PRIOR TO EXCAVATION.

B. ARMOR SUMP PUMP DISCHARGE LOCATIONS TO PREVENT EROSION AT POINT OF DISCHARGE AND AREAS DOWNSTREAM.

C. IF FOUNDATION EXCAVATIONS GRADE TO DAYLIGHT ON THE LOW SIDE, DEVISE AND INSTALL CONTROL MEASURES TO HANDLE SURFACE AND GROUNDWATER FLOW FROM EXCAVATION LOW POINT.

D. STOCKPILE EXCAVATED MATERIALS TO BAFFLE OVERLAND RUNOFF, AVOIDING THE CREATION OF LENGTHY PATHS OF CONCENTRATED RUNOFF. STOCKPILE SLOPES SHALL NOT EXCEED 2:1.

E. BACKFILL UTILITY TRENCHES AS SOON AS PRACTICABLE TO PREVENT FLOODING, SLOUGHING, POTENTIAL OVERFLOW, AND REPETITIVE EARTH DISTURBANCE.

3.05 SITE GRADING

A. WHERE APPLICABLE, FOLLOW EXCAVATION AND FILL PRACTICES SHOWN ON DRAWINGS TO LOCALIZE AND MINIMIZE EROSION.

B. MONITOR SEDIMENT VOLUME IN TEMPORARY SEDIMENT BASINS AND AT DIVERSION BERMS AND CHECK DAMS. IN ALL AREAS EXCEPT THOSE THAT DO NOT PRESENT POTENTIAL PROBLEMS WITH REGARD TO FUTURE SOIL STABILITY, DRAINAGE, OR BEARING CAPACITY, REMOVE AND PROPERLY DISPOSE OF TRAPPED SEDIMENT BEFORE BRINGING SITE TO FINAL SUBGRADE.

C. EXPOSED SOILS SHALL BE PERMANENTLY STABILIZED WITHIN FIVE (5) BUSINESS DAYS OF COMPLETION OF CONSTRUCTION OF A GIVEN AREA. EXPOSED AREAS WHERE NO WORK HAS OCCURRED FOR FOURTEEN (14) DAYS SHALL BE TEMPORARILY STABILIZED WITH HYDROSEED OR OTHER APPROVED METHOD.

D. SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED IMMEDIATELY AFTER COMPLETION.

3.06 LANDSCAPING

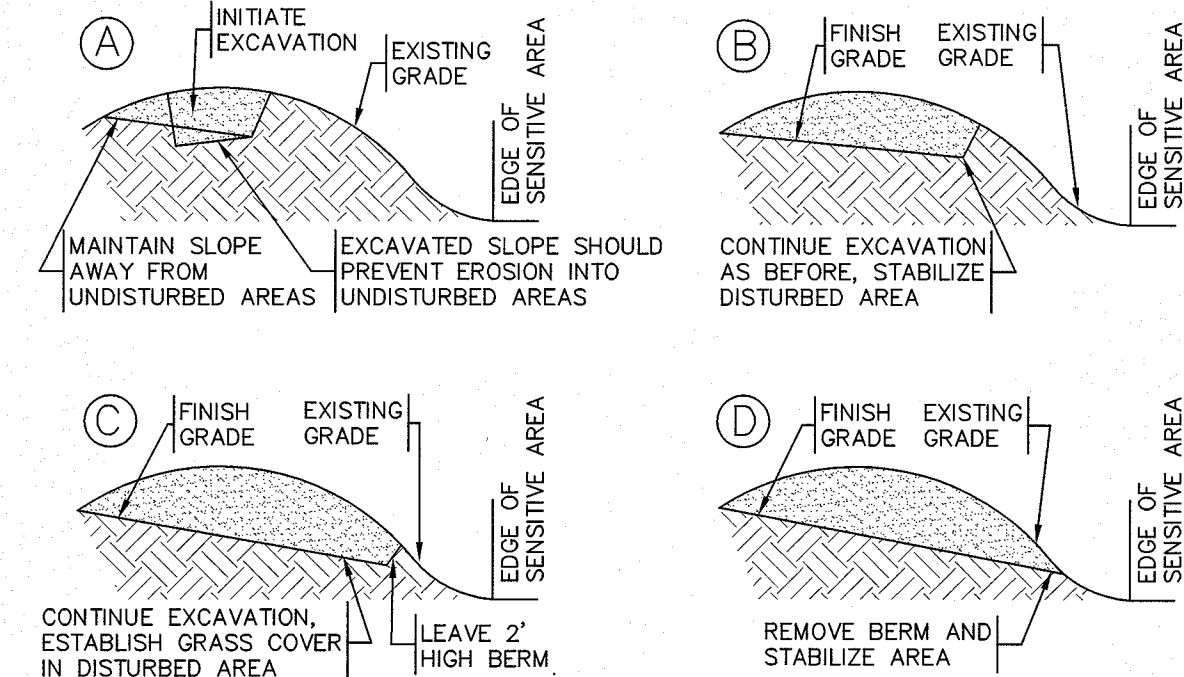
A. COMPLETE LANDSCAPING AS SOON AS POSSIBLE AFTER COMPLETION OF FINAL SUBGRADE.

B. IMMEDIATELY AFTER PLACEMENT OF TOPSOIL, STABILIZE WITH CONTROL MEASURES INCLUDING, BUT NOT NECESSARILY LIMITED TO, SEED MIX, MULCH, AND / OR BLANKET.

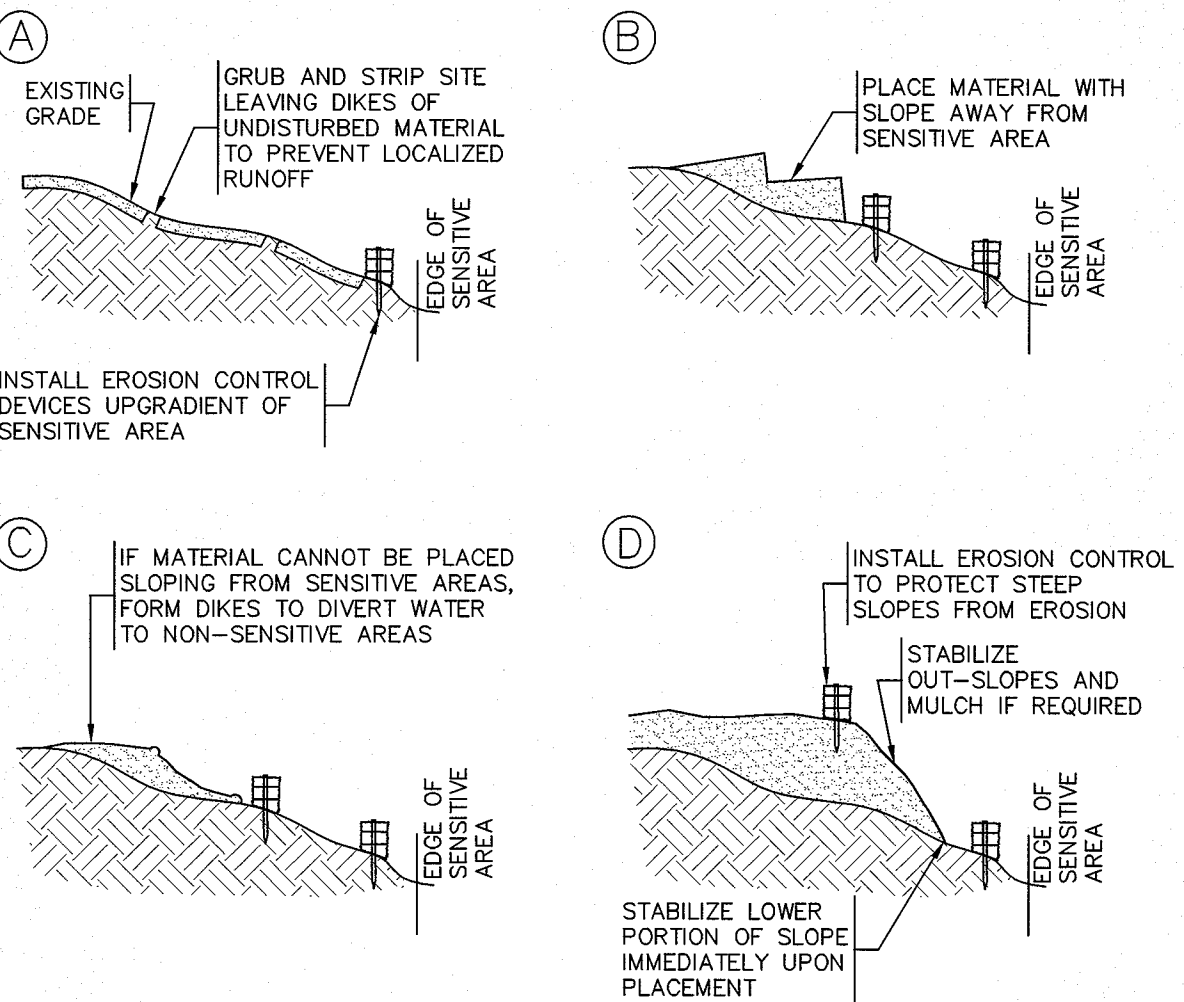
C. PERMANENT SEEDING MAY BE PERFORMED IN THE SPRING PRIOR TO JULY 1 AND IN BETWEEN AUGUST 1 AND OCTOBER 15. PERMANENT SEEDING AT OTHER TIMES SHALL BE APPROVED AND SHALL ONLY BE ALLOWED WITH AN APPROVED MULCHING AND IRRIGATION PROGRAM.

GENERAL SEQUENCE OF CONSTRUCTION

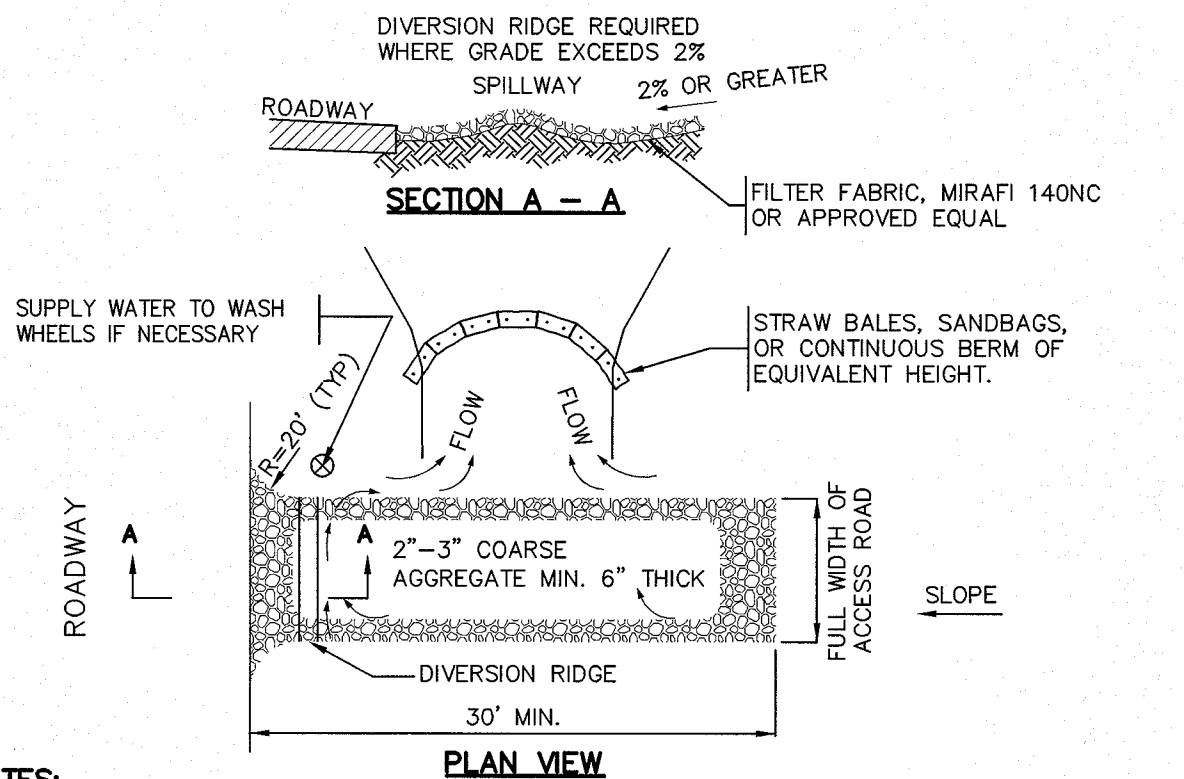
1. PLACE LIMIT OF WORK BARRIERS, FENCES, CONSTRUCTION ENTRANCES AND REQUIRED FENCING & SIGNS.
2. CONSTRUCT SEDIMENT TRAPS & BARRIERS AND PLACE OTHER CONTROLS, DIVERSION TRENCHES, PERIMETER DIKES, WATER BARS & OUTLET PROTECTION.
3. ESTABLISH STOCKPILE AND STAGING AREAS.
4. CUT TREES AND SHRUBS AND REMOVE FROM SITE OR STOCKPILE AND PROTECT STOCKPILE(S) BY APPROVED METHODS.
5. EXCAVATE STUMPS AND REMOVE FROM SITE OR STOCKPILE AND PROTECT STOCKPILE(S) BY APPROVED METHODS.
6. COMMENCE CONSTRUCTION ON WETLAND CROSSING.
7. INSTALL DRAINAGE SYSTEM BEGINNING WITH INFILTRATION BASIN AREA. INSTALL, STABILIZE AND PROTECT INFILTRATION BASIN AREAS AND OTHER AREAS DISTURBED FOR COMPONENTS OF DRAINAGE SYSTEM (INFILTRATION BASIN IS TO REMAIN OFFLINE UNTIL ROADWAY CONSTRUCTION IS COMPLETE AND STABILIZED)..
8. CLEAR, ROUGH GRADE & STABILIZE SLOPES OF ROADWAY.
9. BEGIN INSTALLATION OF OTHER UTILITIES. ESTABLISH COVER, STABILIZE AND PROTECT AREAS DISTURBED FOR UTILITY INSTALLATION.
10. BEGIN EXCAVATION FOR STRUCTURES, STOCKPILE AND PROTECT EXCAVATED MATERIALS.
11. BACKFILL FOUNDATIONS STABILIZE ALL DISTURBED AREAS AND REMOVE EXCESS SOIL FROM SITE.
12. PERFORM SITE WORK IN ACCORDANCE WITH "EROSION AND SEDIMENT CONTROL REQUIREMENTS, PART 3 – EXECUTION".
13. VERIFY ALL AREAS HAVE BEEN STABILIZED, RE-SEED EXPOSED SOILS.
14. CLEAN INFILTRATION AREA, CLEAN CATCH BASINS AND STORM DRAINS. REMOVE SOILS FROM SITE.
15. REMOVE ALL EROSION CONTROLS, LIMIT OF WORK BARRIERS, FENCES, CONSTRUCTION ENTRANCES, SIGNS AND SWEEP PAVED AREAS.



1 EXCAVATION PROCEDURE
SCALE: N.T.S.

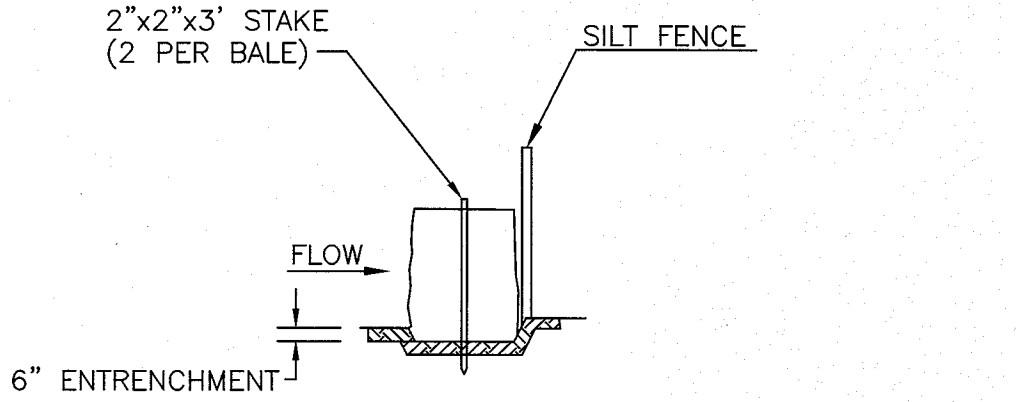


3 FILL PROCEDURE
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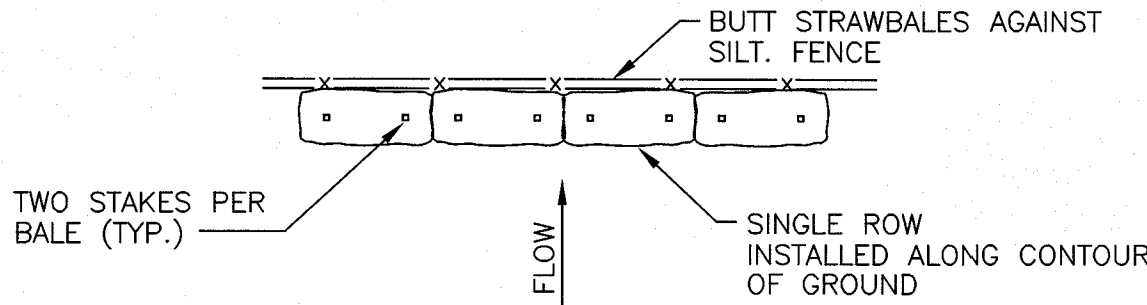


- NOTES:
- [1] THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
 - [2] WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
 - [3] WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
 - [4] USE SANDBAGS, STRAW BALES OR OTHER APPROVED METHODS TO CHANNELIZE RUNOFF TO BASIN AS REQUIRED.

5 CONSTRUCTION ENTRANCE
SCALE: N.T.S.

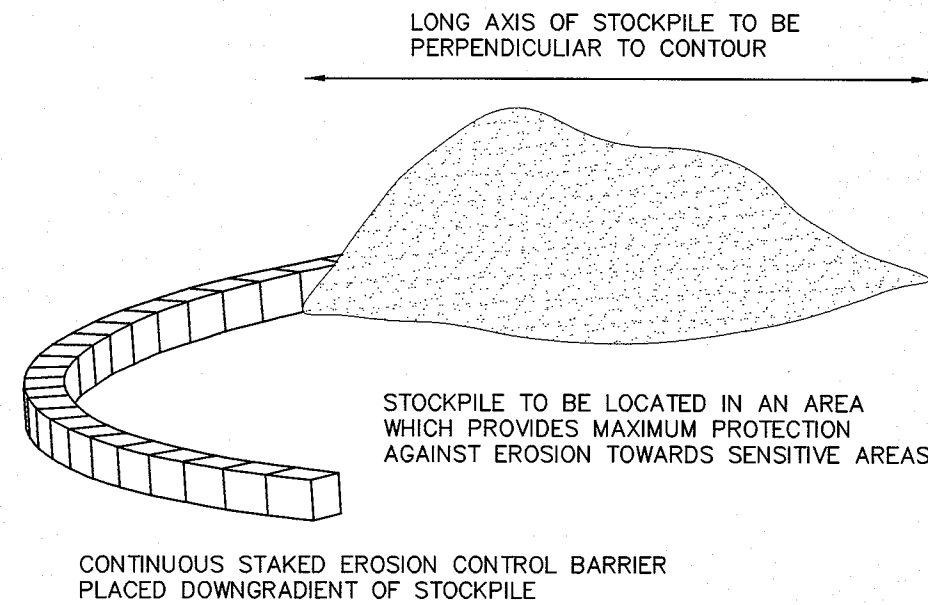


STRAWBALE SECTION

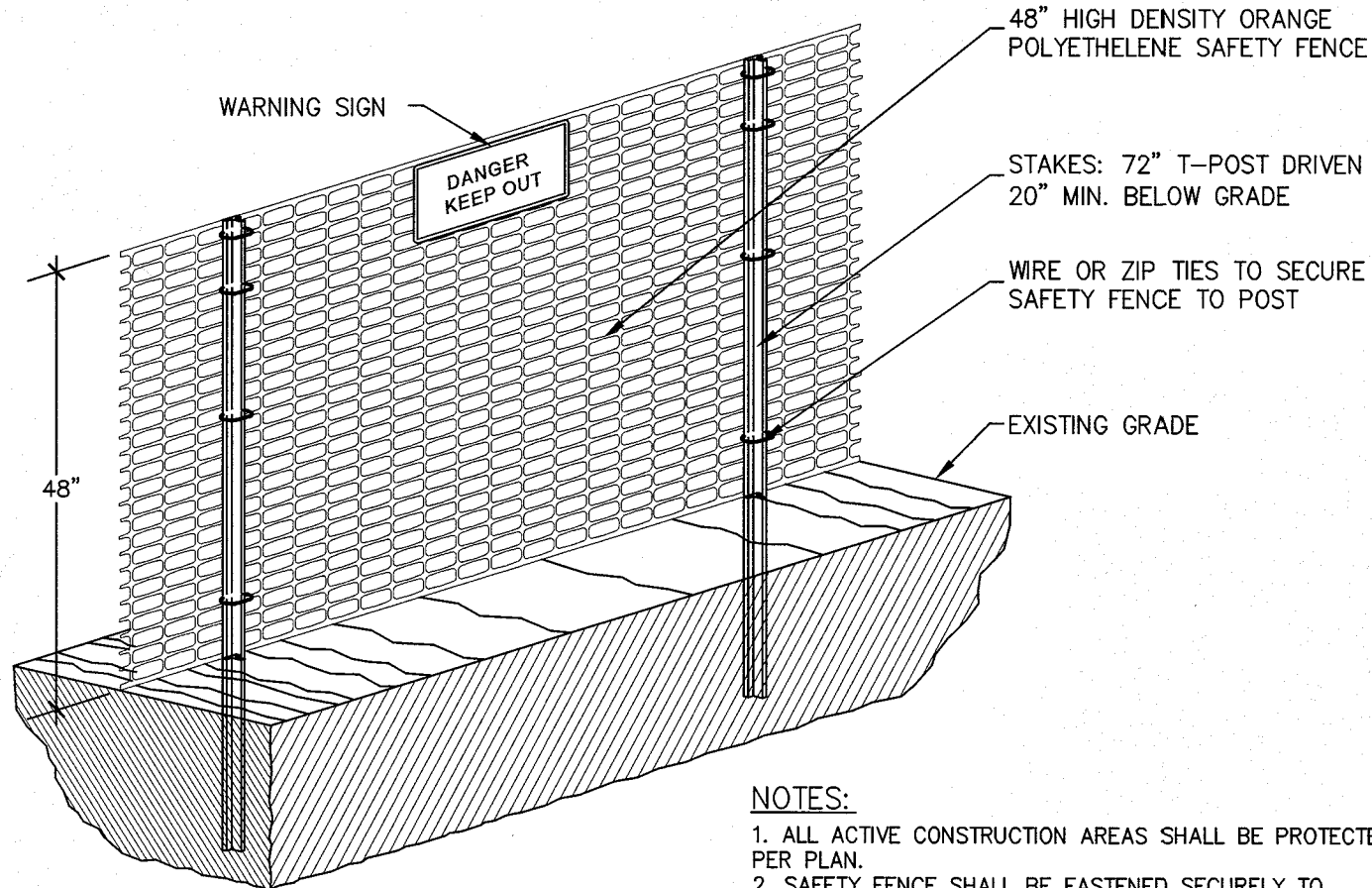


PLAN VIEW

2 EROSION CONTROL BARRIER (ECB)
SCALE: N.T.S.



4 TEMPORARY STOCKPILE
SCALE: N.T.S.



- NOTES:
1. ALL ACTIVE CONSTRUCTION AREAS SHALL BE PROTECTED PER PLAN.
 2. SAFETY FENCE SHALL BE FASTENED SECURELY TO T-POSTS.
 3. FENCING MUST REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION; ANY CHANGE OF THE SAFETY FENCE MUST BE APPROVED.
 4. "DANGER KEEP OUT" SIGNS TO BE SPACED AT 100 FOOT INTERVALS.

6 CONSTRUCTION SAFETY FENCE
SCALE: N.T.S.



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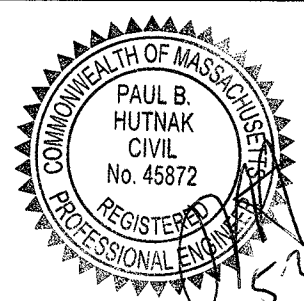
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SITE DEVELOPMENT PLAN
137 BARTON ROAD
STOW, MA 01775

APPLICANT:
COLLINGS FOUNDATION, INC.
P.O. BOX 248
STOW, MA 01775

REVISIONS		
NO.	DATE	DESCRIPTION
1	4/22/15	PER REVIEW COMMENTS
2	5/18/15	PER REVIEW COMMENTS
CAD FILE ...\\dwg\2014-021_SP-R6.dwg		
DRAWN BY TRB, SJO		
CHECKED BY PBH		
DATE JANUARY 20, 2015		
PROJECT NO. 2014-021		

SHEET TITLE

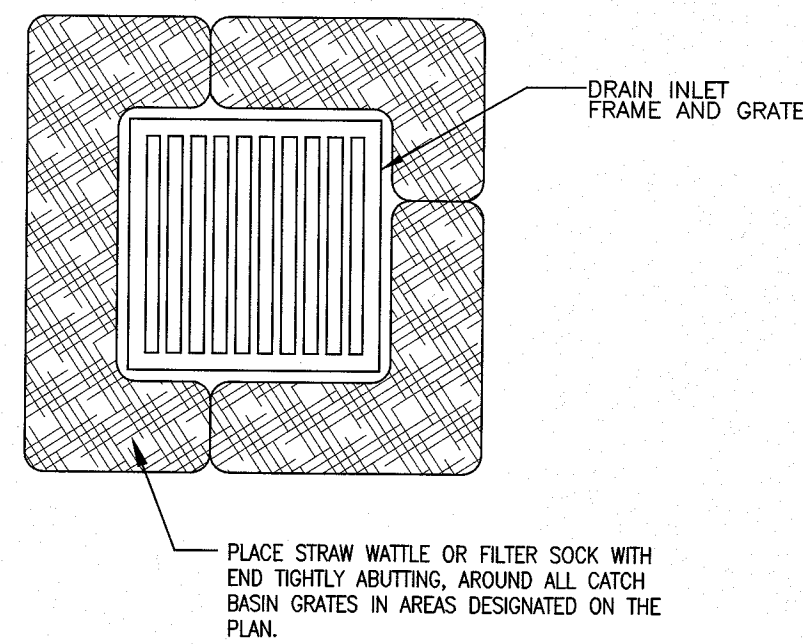
EROSION & SEDIMENT
CONTROL NOTES
SHEET 3 OF 4



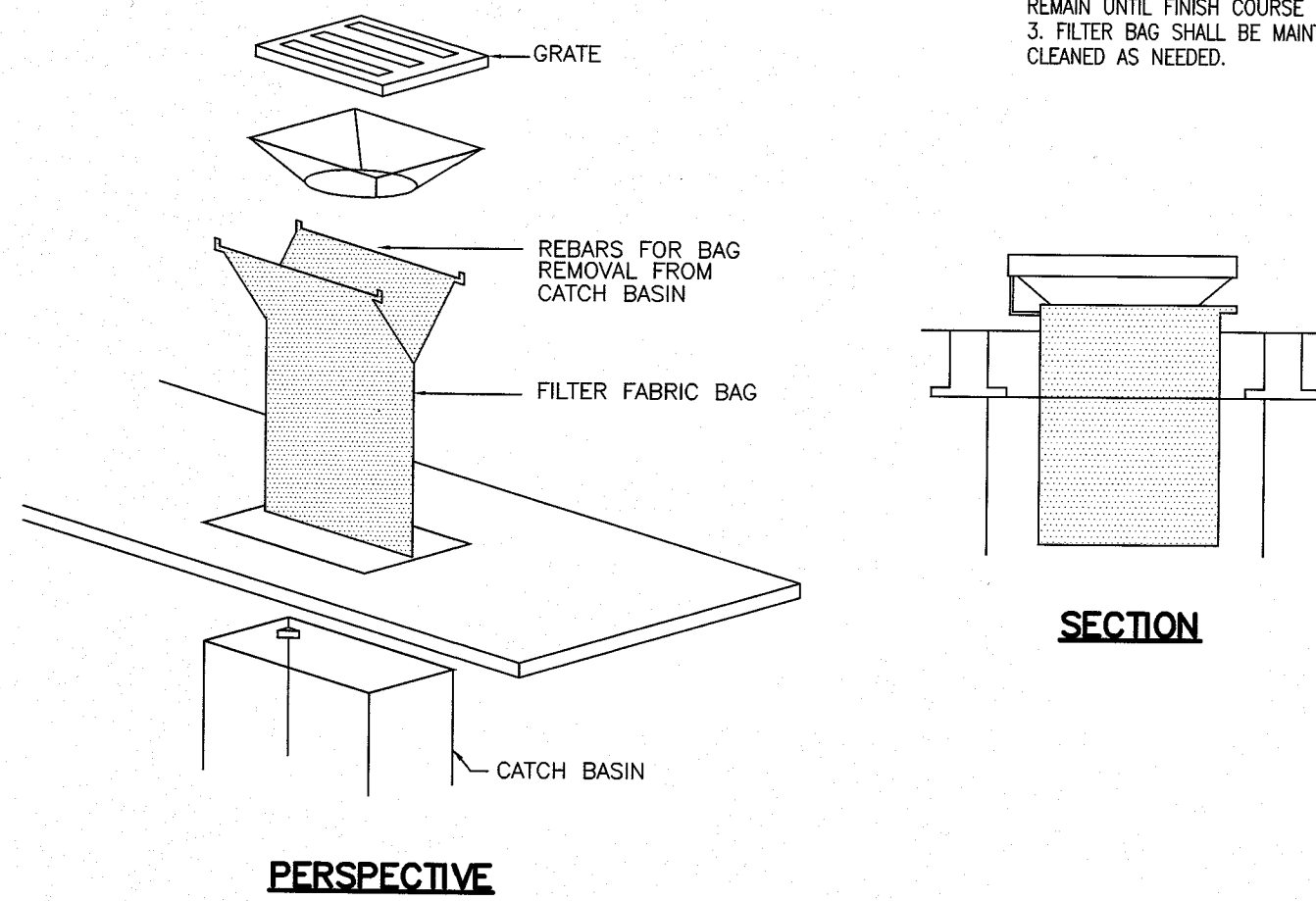
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C-3.3

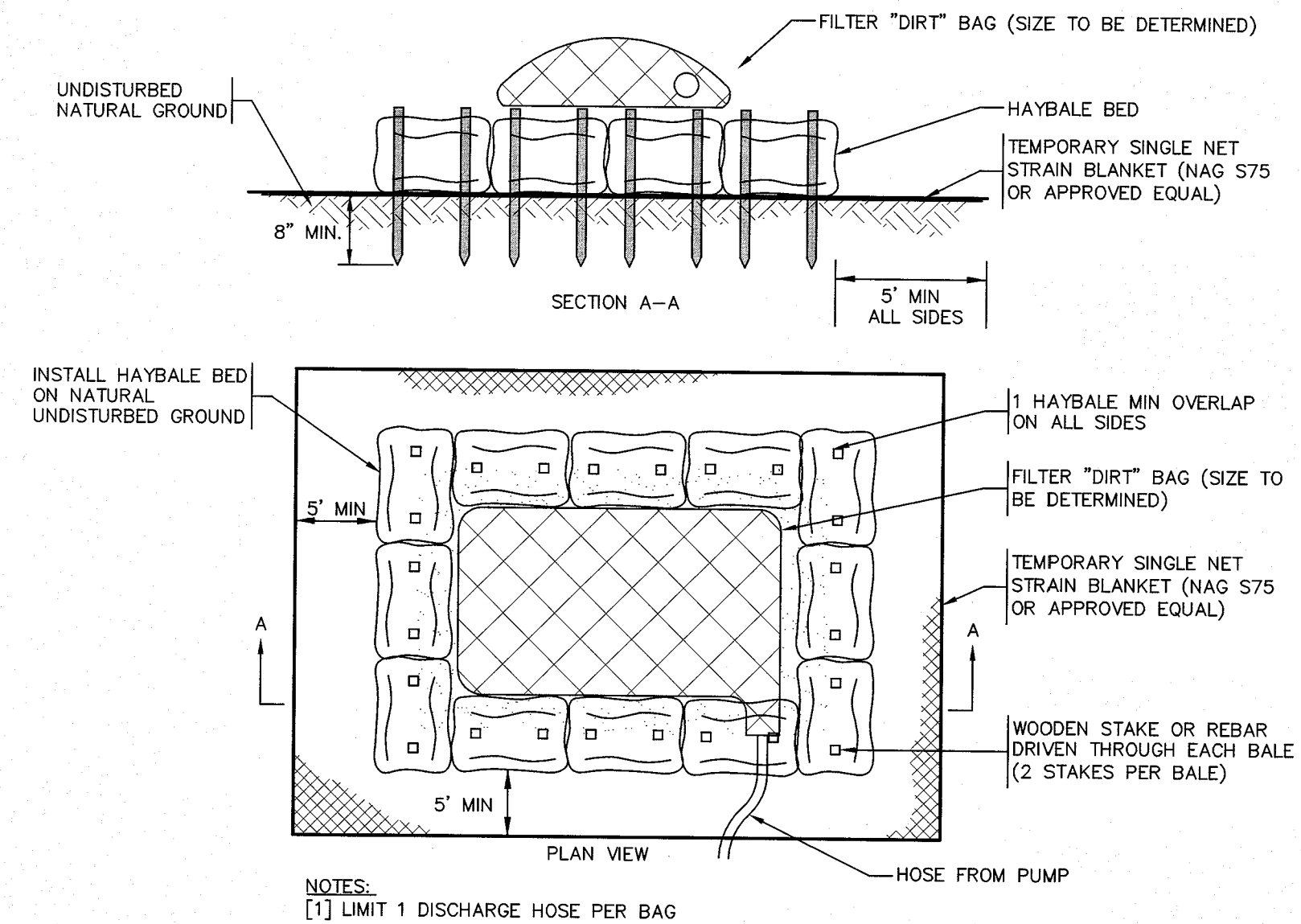
PLAN NO. L-4403



1 CATCH BASIN STRAW WATTLE/FILTER SOCK
SCALE: N.T.S.



2 TYPICAL CATCH BASIN FILTER BAG DETAIL
SCALE: N.T.S.



3 TEMPORARY DEWATERING STRUCTURE
SCALE: N.T.S.



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BEING A MAJORITY

DATE:

APPROVAL UNDER SITE PLAN REVIEW.
HUDSON PLANNING BOARD

BEING A MAJORITY

DATE:

PROJECT:

THE COLLINGS FOUNDATION
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REVISIONS

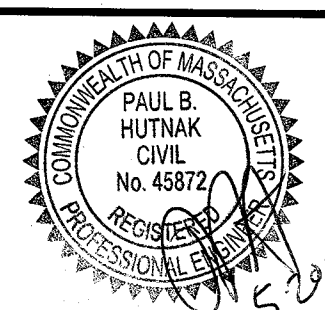
NO.	DATE	DESCRIPTION
1	4/22/15	PER REVIEW COMMENTS
2	5/18/15	PER REVIEW COMMENTS

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DRAWN BY	TRB, SJO
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DATE	JANUARY 20, 2015
PROJECT NO.	2014-021

SHEET TITLE

EROSION & SEDIMENT
CONTROL NOTES

SHEET 4 OF 4



DRAWING NO.

C-3.4

PLAN NO. L-4403



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HUDSON PLANNING BOARD

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SHEET TITLE

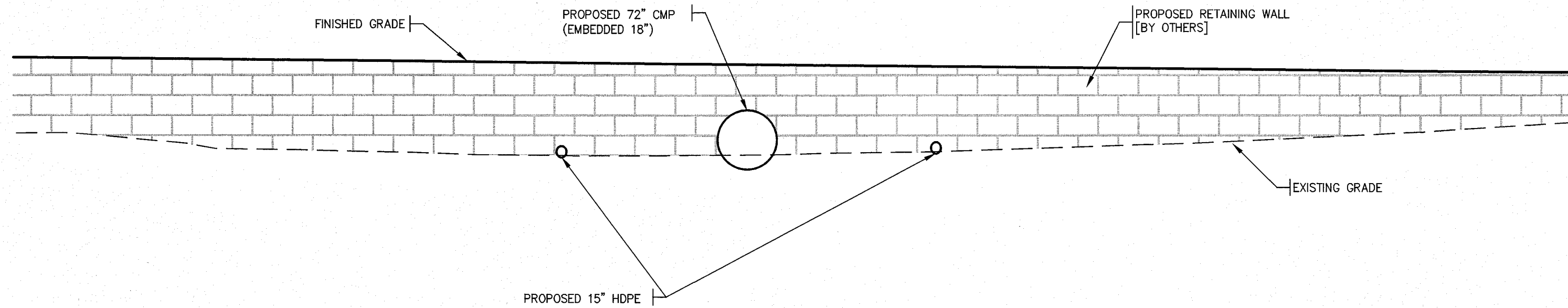
WETLAND CROSSING
& MITIGATION PLAN



DRAWING NO.

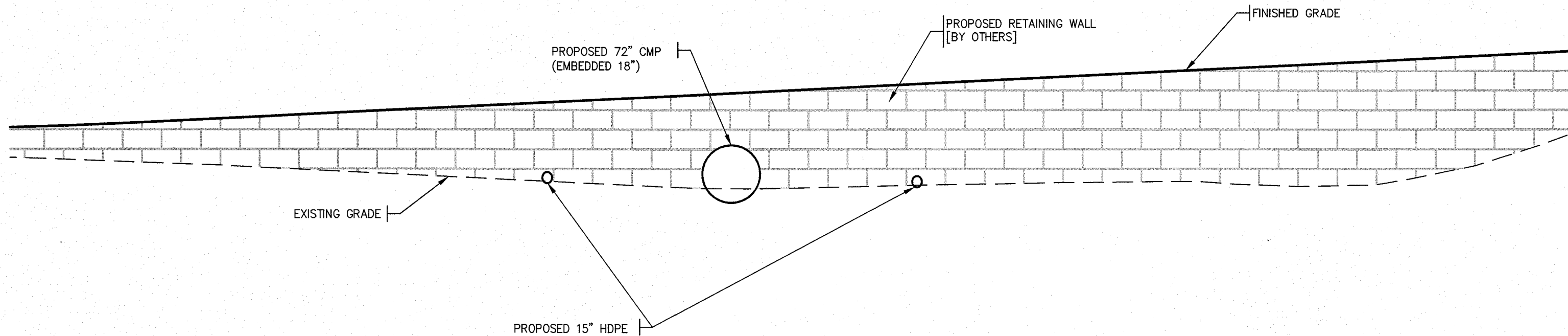
C-4.1

PLAN NO. L-4403



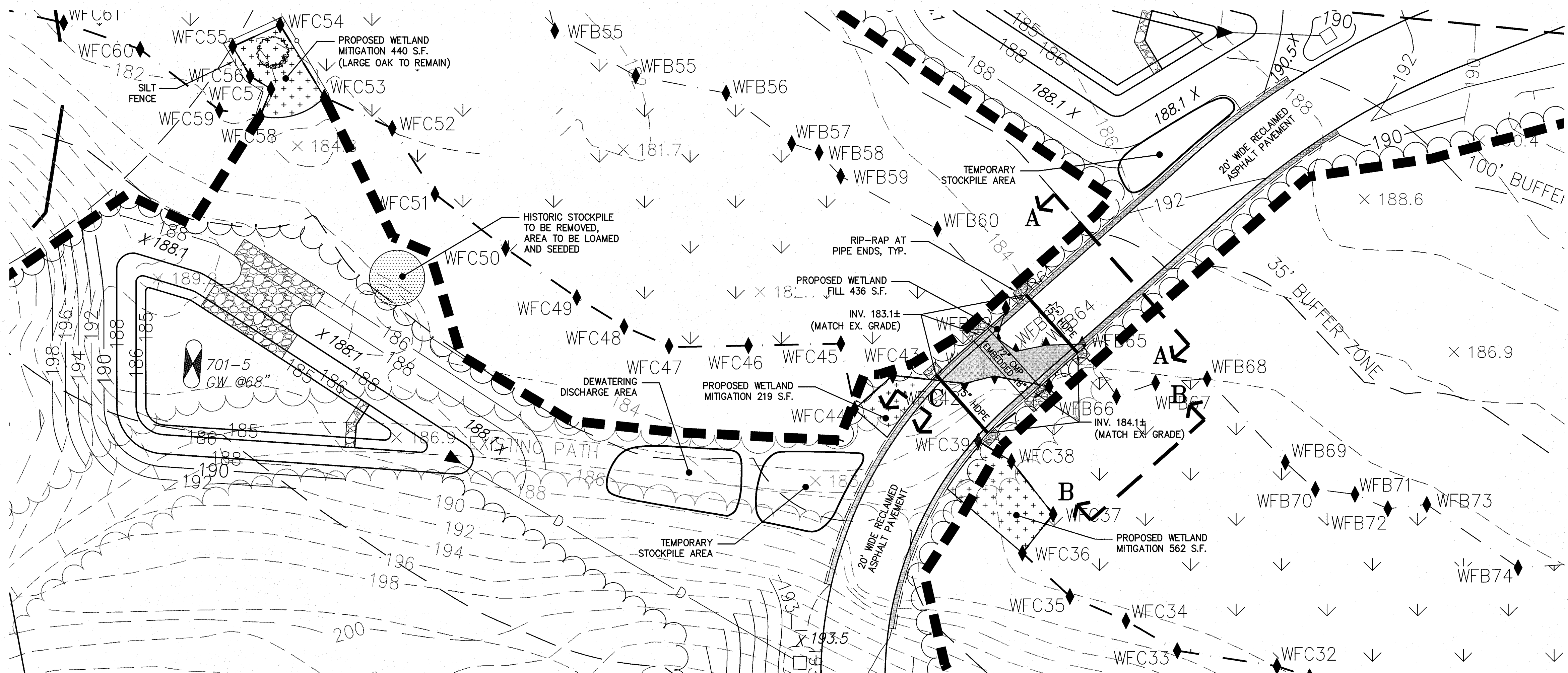
PROPOSED CROSSING

LOOKING WEST AT EAST RETAINING WALL
HORIZONTAL SCALE 1" = 10'
VERTICAL SCALE 1" = 1'



PROPOSED CROSSING

LOOKING EAST AT WEST RETAINING WALL
HORIZONTAL SCALE 1" = 10'
VERTICAL SCALE 1" = 1'



PLAN VIEW

SCALE 1" = 20'

WETLAND MITIGATION CONSTRUCTION PROTOCOL:

- THE FOLLOWING PROTOCOL CONFORMS TO THE GENERAL PERFORMANCE STANDARDS IN THE MA WETLANDS PROTECTION ACT REGULATIONS AT 310 CMR 10.55(4)(b) AS SUMMARIZED IN TABLE 2. PLEASE NOTE THAT THE MITIGATION AREA WILL BE BROUGHT TO SUB-GRADE PRIOR TO INITIATING WORK AT THE WETLAND CROSSING.
- THE WETLAND BOUNDARIES (I.E., DOWN GRADIENT EDGES OF THE WETLAND MITIGATION AREA) WILL BE MARKED IN THE FIELD.
- PRIOR TO THE START OF EARTH-MOVING ACTIVITIES IN THE MITIGATION AREA, AN EROSION CONTROL BARRIER OF PROPERLY INSTALLED SILTATION FENCE (I.E., THE BOTTOM FEW INCHES OF THE SILTATION FENCE INSTALLED IN A NARROW, TRENCH AND THE TRENCH FILLED WITH SOIL AROUND THE SILTATION FENCE) WILL BE INSTALLED ALONG THE WETLAND BOUNDARIES BETWEEN THE WETLAND AND THE WETLAND MITIGATION AREA. THE WETLAND MITIGATION AREA WILL THEN BE CLEARED AND GRUBBED, WITH THE EXCEPTION OF THE TREES THAT HAVE BEEN MARKED TO BE SAVED.
- THE PROPOSED FINAL GRADE FOR THE MITIGATION AREA SHOULD APPROXIMATE THE ELEVATION OF THE ADJACENT WETLAND AREAS, AS NOTED ON THE SITE PLANS. THE MITIGATION AREA WILL BE EXCAVATED TO A DEPTH OF 12 INCHES BELOW THE PROPOSED FINAL GRADE. THE EXCAVATION AND PLANTING WORK WILL BE CLOSELY SUPERVISED BY A QUALIFIED WETLAND SCIENTIST. MINOR MODIFICATIONS TO THE PROPOSED GRADING MAY BE MADE IN THE FIELD BY THE WETLAND SCIENTIST IN RESPONSE TO OBSERVED SUBSURFACE HYDROLOGIC CONDITIONS. ALL EXCAVATED MATERIAL WILL BE DISPOSED OF AWAY FROM ALL WETLAND RESOURCE AREAS. EIGHT TO TEN BOULDERS (1 TO 2 FOOT DIAMETER) WILL BE PLACED IN TWO PILES, AT SUBGRADE, WITHIN THE MITIGATION AREA TO PROVIDE WILDLIFE SHELTERS. TWO TREE TRUNKS, APPROXIMATELY 20 FEET IN LENGTH, WILL BE "PLANTED" UPRIGHT, WITHIN THE MITIGATION AREA, TO PROVIDE NESTING CAVITIES AND FORAGE OPPORTUNITIES.
- EXISTING TOPSOILS WITHIN THE IMPACT AREA WILL BE EXCAVATED, STOCKPILED AND KEPT MOIST BY WATERING AND/OR COVERING.
- RELOCATED WETLAND TOPSOILS WILL BE SUPPLEMENTED WITH A 1:1 MIXTURE OF HIGH QUALITY, LOAMY TOPSOIL AND LEAF MOLD COMPOST, AS NECESSARY, TO APPROXIMATE 12 INCHES IN THICKNESS THROUGHOUT THE MITIGATION AREA. THE SUBSTRATE WILL BE ROUGHLY GRADED TO PROVIDE AN APPROPRIATE MICROTOPOGRAPHY. A MINIMUM OF 4 INCHES OF LOAMY TOPSOIL WILL BE APPLIED TO THE SIDE-SLOPES OF THE WETLAND MITIGATION AREA. THE SIDE SLOPES SHOULD BE STABILIZED AS NECESSARY TO PREVENT EROSION.
- WILDLIFE ENHANCEMENT MEASURES INCLUDING THREE TREE TRUNKS AND ONE ROCK PILE WILL BE INSTALLED WITHIN EACH MITIGATION AREA. THE TREE TRUNKS WILL CONSIST OF 15 TO 20 FOOT LOGS PLACED RANDOMLY ON THE FINISHED SURFACE. THE TREE TRUNKS WILL PROVIDE FOOD, FORAGE AND CAVITY NESTING OPPORTUNITIES. THE ROCK PILES WILL CONSIST OF FOUR OR FIVE BOULDER EACH (APPROXIMATELY 24 INCHES IN DIAMETER) PILED AT SUB-GRADES SO AS TO CREATE CREVICES AND CAVITIES FOR SHELTER AND NESTING.
- AN EROSION CONTROL BARRIER COMPRISING ONLY TOED-IN SILTATION FENCE WILL BE PROPERLY INSTALLED BETWEEN THE COMPLETED MITIGATION AREA AND THE ADJACENT UPLAND SIDESLOPES.
- PLANTING WILL BE DONE ONLY DURING THE BEGINNING (APRIL 15 THROUGH JUNE) OR END (SEPTEMBER 1 TO NOVEMBER 15) OF THE GROWING SEASON. PLANTING IN THE MID-GROWING SEASON IS ONLY ACCEPTABLE IF IRRIGATION IS PROVIDED. THE PLANT SPECIES IDENTIFIED IN THE TABLE BELOW WILL BE PLANTED IN THE MITIGATION AREA EITHER BY TRANSPLANT OR FROM NURSERY STOCK. THE SAPLINGS WILL BE DISTRIBUTED THROUGHOUT THE AREA. THE SHRUBS WILL BE PLANTED RANDOMLY THROUGHOUT THE AREA WITH THE AVERAGE SPACING BETWEEN SHRUBS APPROXIMATELY 5 FEET ON-CENTER. THE WOODY VEGETATION SHOULD NOT BE PLANTED IN ROWS. THE FERNS WILL BE PLANTED BETWEEN THE SHRUBS AND SAPLINGS.
- THE MITIGATION AREA WILL BE SEEDDED WITH "NEW ENGLAND WETMIX" AS PER NEW ENGLAND WETLAND PLANTS, INC SPECIFICATIONS OR APPROVED EQUAL TO PROVIDE FOR TEMPORARY EROSION CONTROL AND MOISTURE RETENTION.
- THE MITIGATION AREAS WILL BE INSPECTED, BY A QUALIFIED WETLAND SCIENTIST, AT THE END OF EACH GROWING SEASON FOR A MINIMUM OF TWO YEARS OR UNTIL SUCH TIME AS THE REQUIRED 75% OF VEGETATIVE COVER WITH WETLAND SPECIES HAS BEEN ESTABLISHED. WRITTEN RESULTS OF THESE INSPECTIONS WILL BE SUBMITTED TO THE CONSERVATION COMMISSION.
- AFTER THE WETLAND MITIGATION AREA HAS BECOME VEGETATIVELY STABILIZED, AND FOLLOWING APPROVAL OF THE ISSUING AUTHORITY, THE SILTATION FENCE AND ALL WOODEN STAKES WILL BE REMOVED AND DISPOSED OF PROPERLY.

SEQUENCE OF CONSTRUCTION:

ALL DRAINAGE STRUCTURES INCLUDING DETENTION PONDS, CROSS CULVERTS, STORM WATER MANHOLES, CATCH BASINS, AND ALL OTHER UNDERGROUND UTILITIES SHALL BE CONSTRUCTED AND STABILIZED PRIOR TO ANY LOT DEVELOPMENT. IMMEDIATELY FOLLOWING CATCH BASIN INSTALLATION, HAY BALES SHALL BE PLACED AROUND RIMS AND ALL DISTURBED AREAS SHALL BE HYDROSEEDDED, MULCHED OR COVERED WITH ENVIRONMENTAL MATTING AND CHECKED REGULARLY TO PREVENT EROSION FROM TAKING PLACE.

WETLANDS FILL AREA
MITIGATION AREA
TOTAL WETLAND FILL AREA FROM ROAD CROSSING: 436 SQ. FT. ±
TOTAL MITIGATION AREA: 1,248 SQ. FT. ±

GENERAL NOTES:

PRIOR TO CONSTRUCTION AND INSTALLATION OF THE PROPOSED DRAINAGE PIPES AND RETAINING WALLS SEPARATE APPROVALS AND/OR PERMITS SHALL BE OBTAINED FROM THE FOLLOWING: INCLUDING BUT NOT LIMITED TO THE TOWN OF STOW CONSERVATION COMMISSION, DEPARTMENT OF PUBLIC WORKS, INSPECTOR OF BUILDINGS, TOWN OF STOW PLANNING BOARD AND CONSULTING ENGINEER(S).

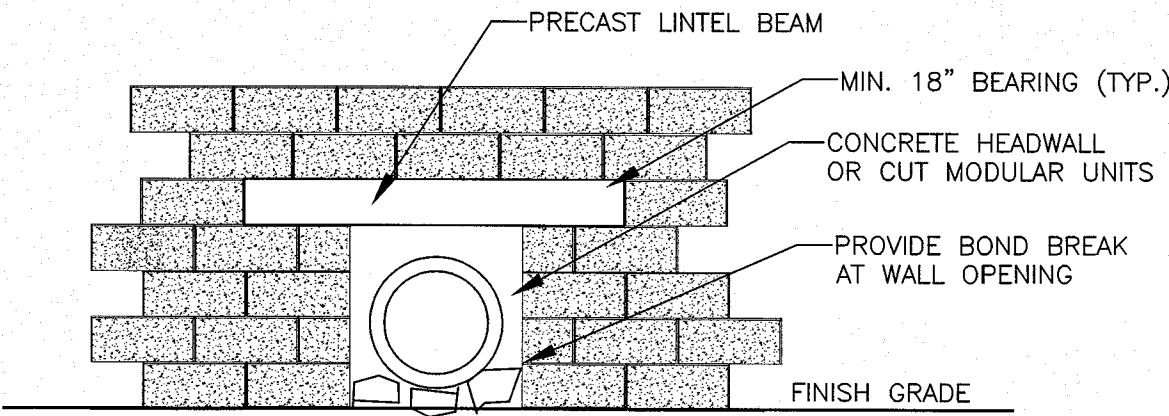
TABLE 1.

PUBLIC INTERESTS:	VALUE OF AREAS TO BE ALTERED:	VALUE OF MITIGATION AREAS:
PUBLIC AND PRIVATE WATER SUPPLY, GROUNDWATER SUPPLY	YES. RECHARGES GROUNDWATER THROUGH INFILTRATION. SEASONALLY RECHARGES SURFACE WATER THROUGH OVERLAND FLOW. OVERLAND FLOW WILL BE MAINTAINED THROUGH CULVERTS.	YES. WILL ALSO RECHARGE GROUNDWATER THROUGH INFILTRATION IN FRIABLE SUBSOIL AND SUBSTRATE.
FLOOD CONTROL AND STORM DAMAGE PREVENTION	YES. SOME STORAGE OF RUNOFF IN SEASONALLY SATURATED SOILS	YES. SEASONALLY SATURATED SOILS WILL STORE EQUAL OR GREATER VOLUMES OF RUNOFF.
PREVENTION OF POLLUTION	YES. CONTAMINANTS AND EXCESS NUTRIENTS RETAINED IN, AND DEGRADED BY, MINERAL AND ORGANIC COMPONENTS OF HYDRIC SOILS.	YES. CONTAMINANTS AND EXCESS NUTRIENTS RETAINED IN, AND DEGRADED BY, MINERAL AND ORGANIC COMPONENTS OF HYDRIC SOILS.
FISHERIES	N/A. NO PERENNIAL WATERWAY OR WATERBODY	N/A. NO PERENNIAL WATERWAY OR WATERBODY
WILDLIFE HABITAT	YES. EXISTING VEGETATIVE LAYERS, SOIL STRUCTURE, DEADWOOD AND SURFACE STONES PROVIDE FORAGING AND SHELTER OPPORTUNITIES.	YES. REPLICATED SOIL STRUCTURE, PLANTING, BOULDER PLACEMENT AND TREE SNAGS WILL PROVIDE OPPORTUNITIES FOR WILDLIFE SHELTER AND FORAGE.

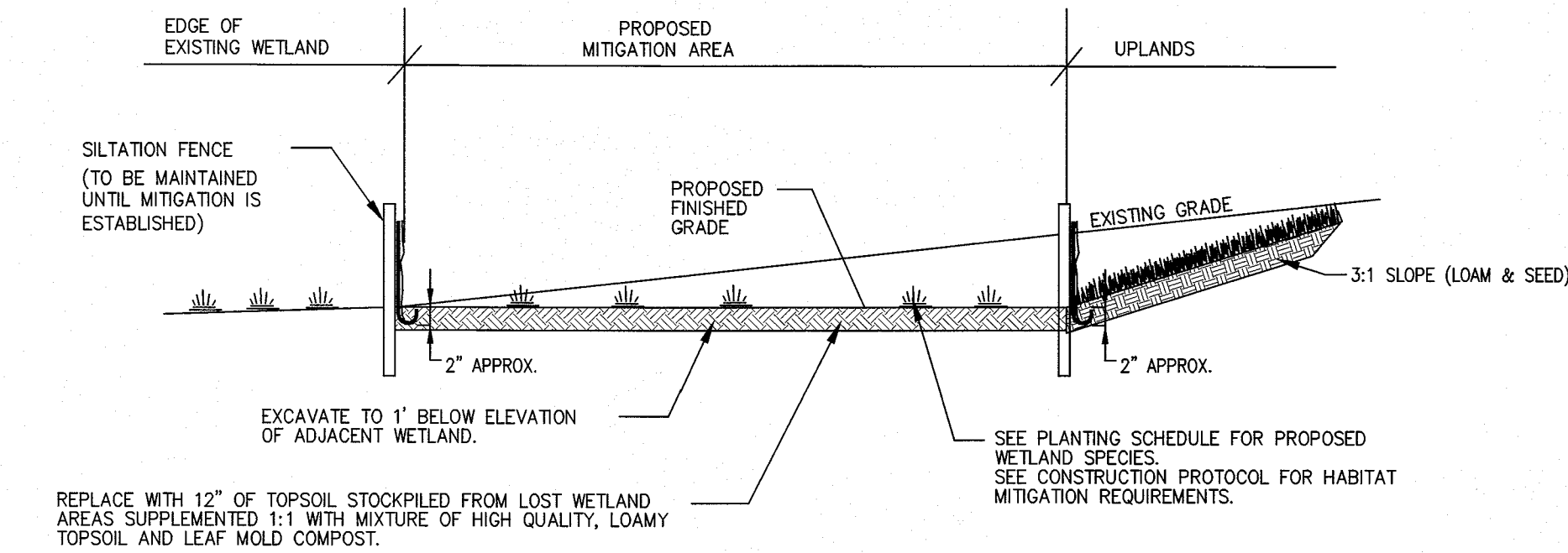
TABLE 2.

PERFORMANCE STANDARD:	STANDARDS MET WITHIN MITIGATION AREA:
EQUAL SURFACE AREAS (800 S.F. ALTERED).	YES. GREATER SURFACE AREA (1,248 S.F. MITIGATED)
SIMILAR GROUNDWATER AND SURFACE ELEVATIONS.	YES. SIMILAR ELEVATIONS.
LOCATION RELATIVE TO BANK	YES. SIMILAR PROXIMITY TO STREAM BANK
UNRESTRICTED HYDRAULIC CONNECTION.	YES. UNRESTRICTED CONNECTION TO SAME BORDERING WETLAND
SAME GENERAL LOCATION.	YES. AS CLOSE AS POSSIBLE TO IMPACTED WETLAND
MINIMUM 75% COVER OF NATIVE WETLAND PLANTS WITHIN TWO GROWING SEASONS AND PREVENTION OF SOIL EROSION.	YES. TO BE INSURED BY FOLLOWING CONSTRUCTION AND PLANTING PROTOCOL COMBINED WITH ANNUAL MONITORING AND RE-PLANTING AND/OR MODIFICATION AS NECESSARY. PLANTING DESIGNED TO REPLICATE LOST AREA(S) IN-KIND. EROSION PREVENTED WITH SILTATION BARRIERS.
CULVERT OPENNESS RATIO OF ≥ 0.25 (ALL CALCULATIONS DONE IN METERS)	YES. OPENNESS RATIO = 0.91 $\frac{X-SEC. CULVERT AREA PRE-EMBED - EMBEDDED AREA}{CULVERT LENGTH} = 0.91$ $\frac{8.6(M^2) - 1.7(M^2)}{7.62 (M)} = 0.91$

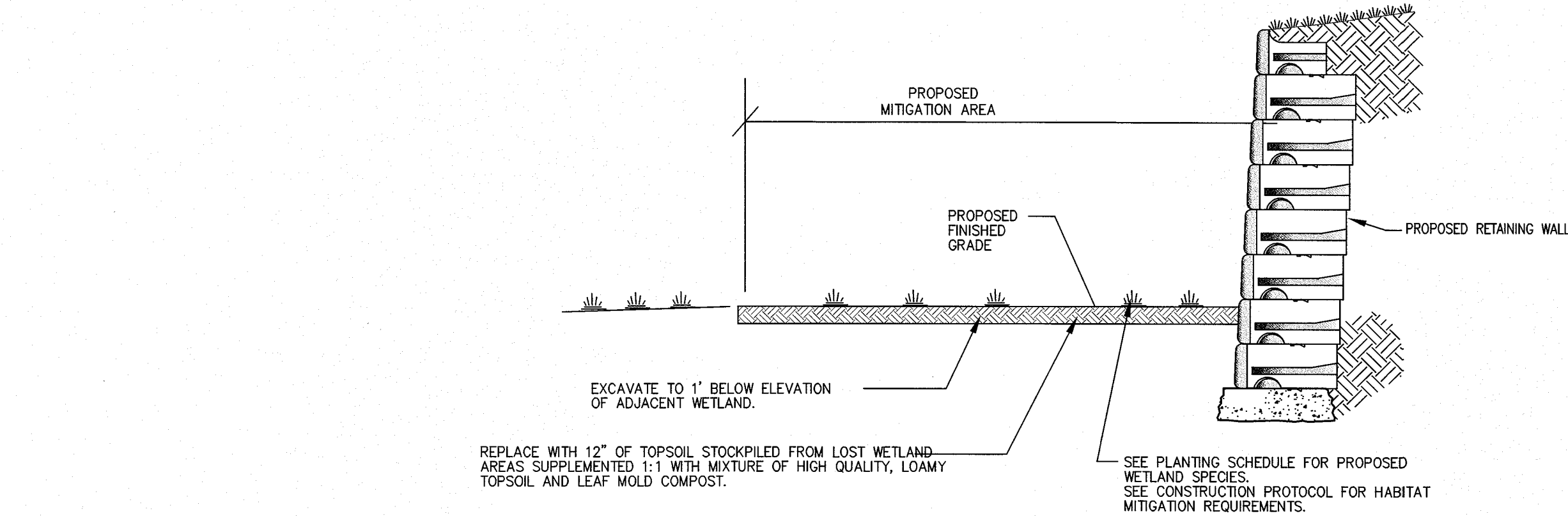
2 RETAINING WALL WITH PIPE OUTLETS
SCALE: N.T.S.



1 TYPICAL WETLAND MITIGATION DETAILS
SCALE: N.T.S.

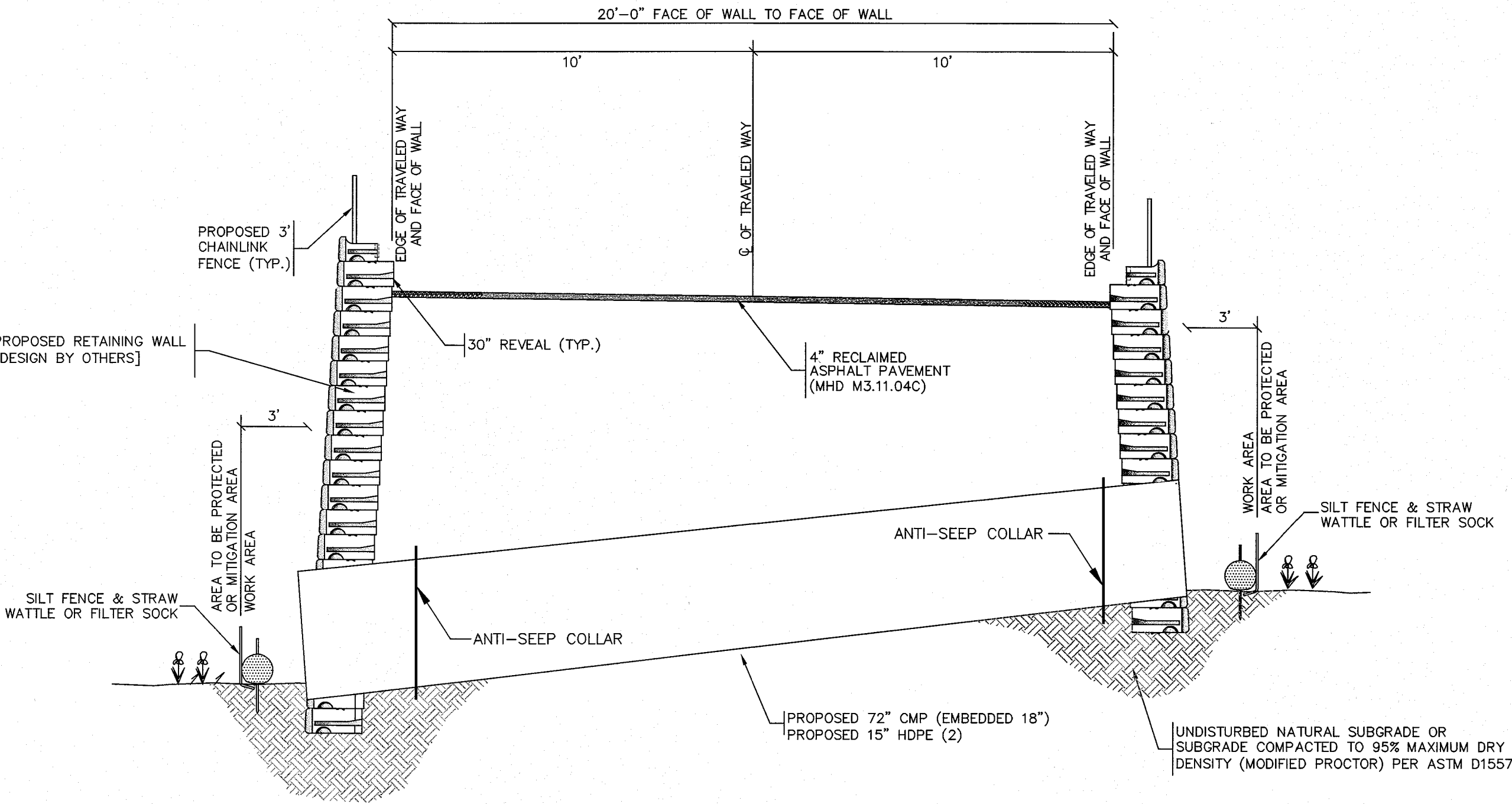


1 TYPICAL WETLAND MITIGATION DETAILS
SCALE: N.T.S.



CROSS SECTION
C-C
N.T.S.

CROSS SECTION
A-A
N.T.S.



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HUDSON PLANNING BOARD

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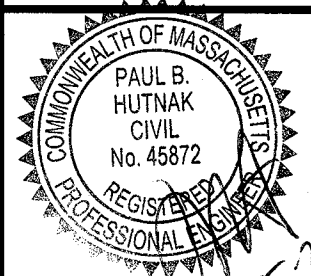
REVISIONS

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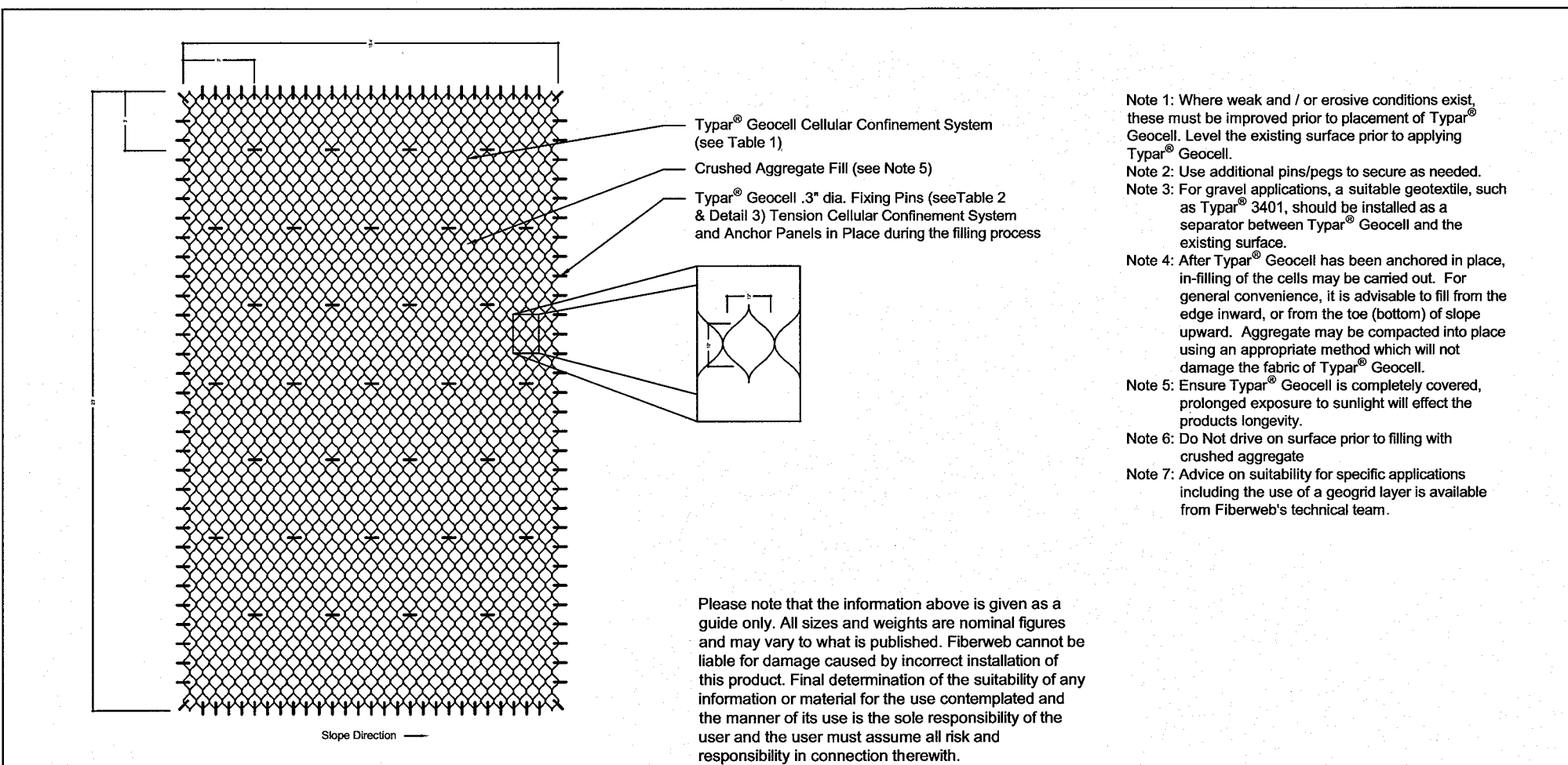
WETLAND CROSSING
& MITIGATION PLAN



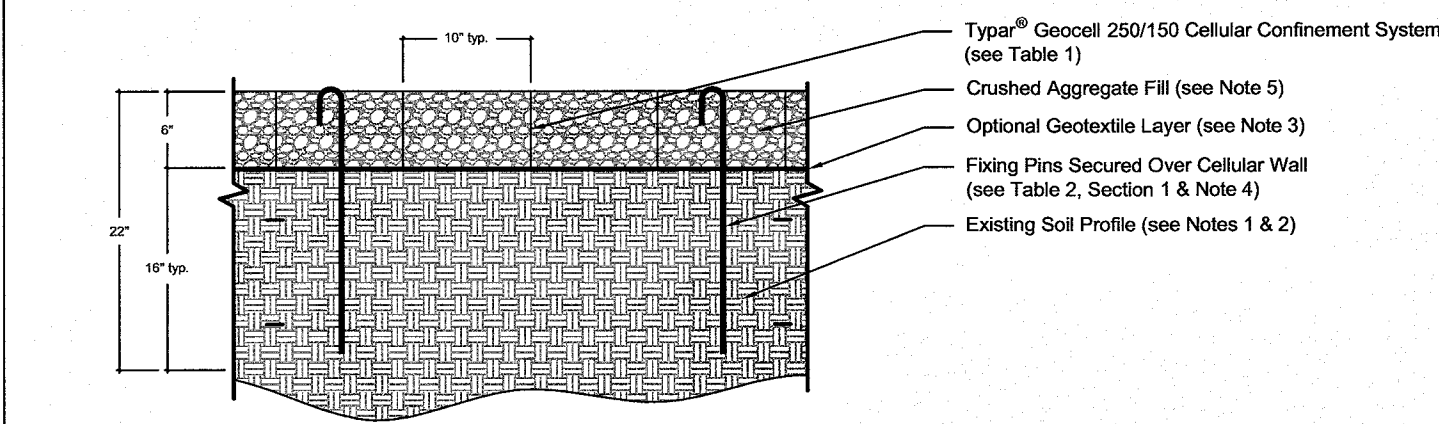
DRAWING NO.

C-4.2

PLAN NO. L-4403



15 **Typar® Geocell GS 250/150 : Typical Pinning Diagram**
Scale: N.T.S.



15 **Typar® Geocell GS 250/150 : Typical Construction Profile**
Scale: N.T.S.

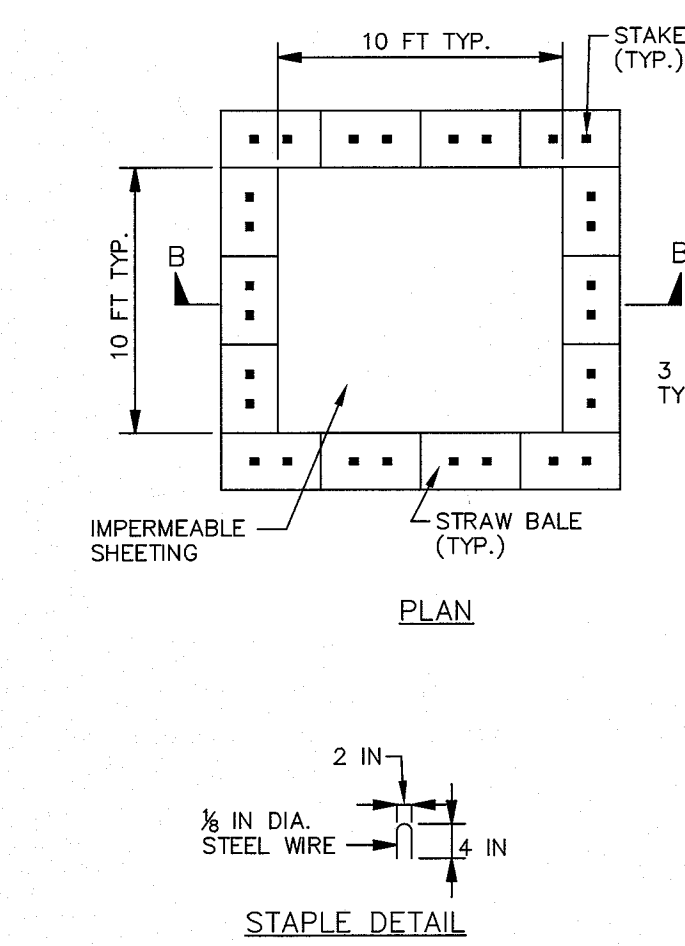
15 **TYPAR® GEOCELL GS 250/150 FOR GROUND STABILIZATION**
SCALE: N.T.S.

Fiberweb Geosynthetics
1911 County Road B West, Suite 102 Roseville, MN 55113

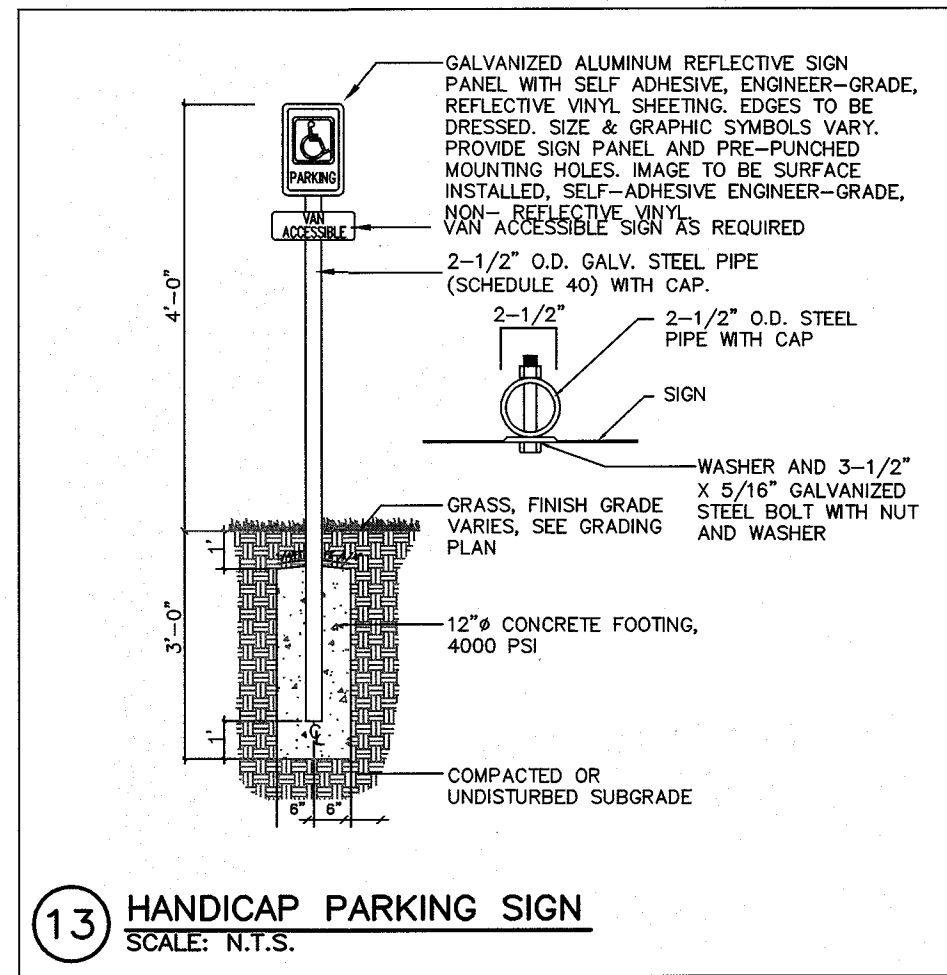
Toll-Free: 1-877-642-9929
Tel: 1-851-330-9929
Fax: 1-851-797-2319
e-mail: geosells@fiberweb.com
website: www.fiberweb.com

Notes:
THE GEOCELL SYSTEM IS TO BE DESIGNED, INSTALLED AND MAINTAINED PER MANUFACTURERS SPECIFICATIONS.

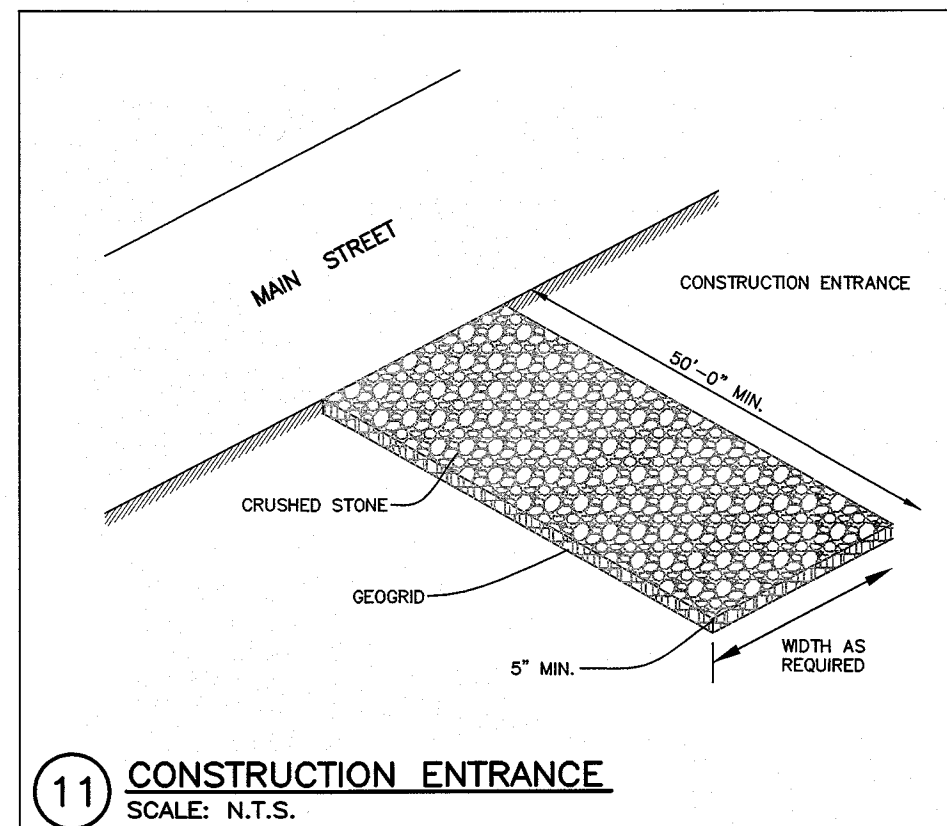
- NOTES:**
1. PERFORM WASHOUT OF CONCRETE TRUCKS OFFSITE OR IN DESIGNATED CONCRETE WASHOUT AREAS ONLY.
 2. PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER. FOR LINER, USE 10 MIL OR THICKER UV RESISTANT IMPERMEABLE SHEETING, FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.
 3. PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.
 4. KEEP CONCRETE WASHOUT STRUCTURE WATER TIGHT. REPLACE IMPERMEABLE LINER IF DAMAGED (E.G., RIPPED OR PUNCTURED). EMPTY OR REPLACE WASHOUT STRUCTURE THAT IS 75 PERCENT FULL AND DISPOSE OF ACCUMULATED MATERIAL PROPERLY. DO NOT REUSE PLASTIC LINER. WET-VACUUM STORED LIQUIDS THAT HAVE NOT EVAPORATED AND DISPOSE OF IN AN APPROVED MANNER. PRIOR TO FORECASTED RAINSTORMS, REMOVE LIQUIDS OR COVER STRUCTURE TO PREVENT OVERFLOWS. REMOVE HARDENED SOLIDS, WHOLE OR BROKEN UP, FOR DISPOSAL OR RECYCLING. MAINTAIN RUNOFF DIRECTION AROUND EXCAVATED WASHOUT STRUCTURE UNTIL STRUCTURE IS REMOVED.



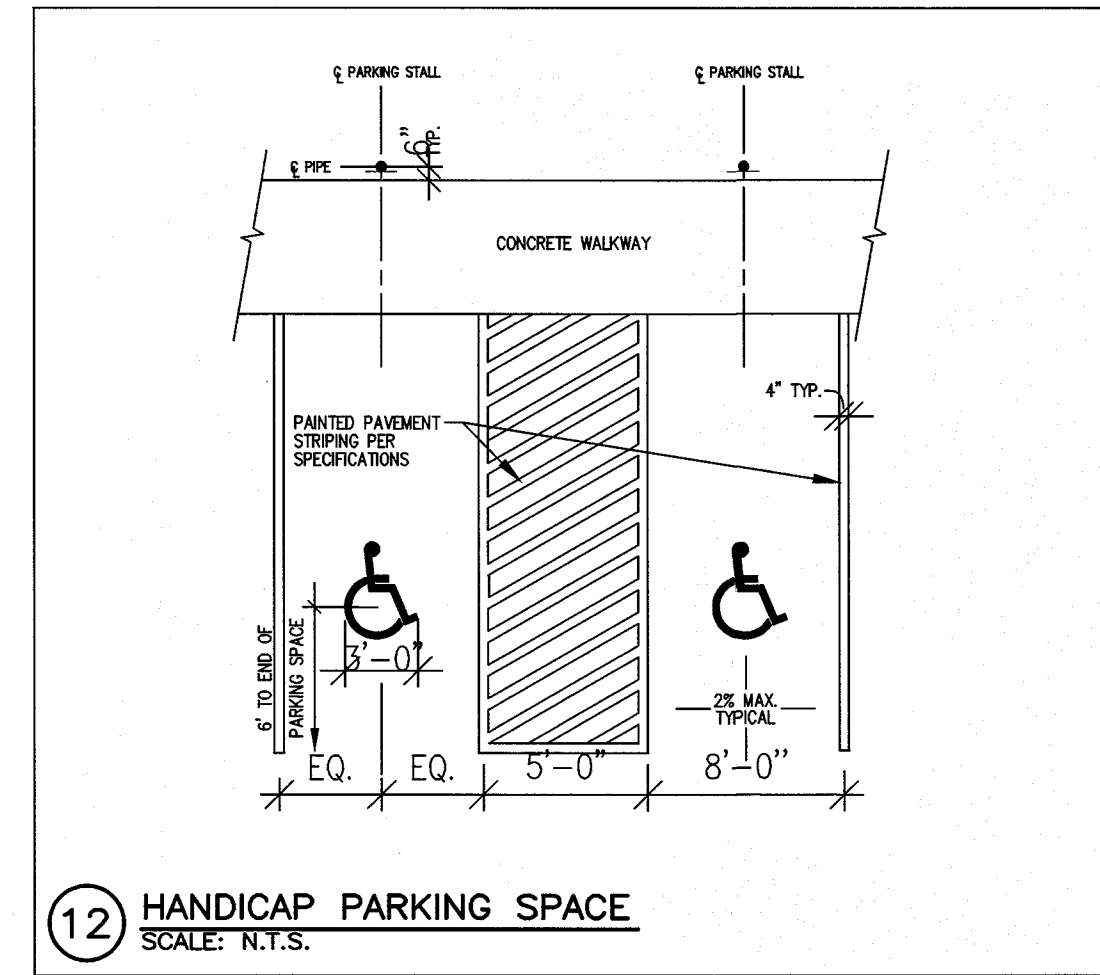
14 **CONCRETE WASH-OUT STATION**
SCALE: N.T.S.



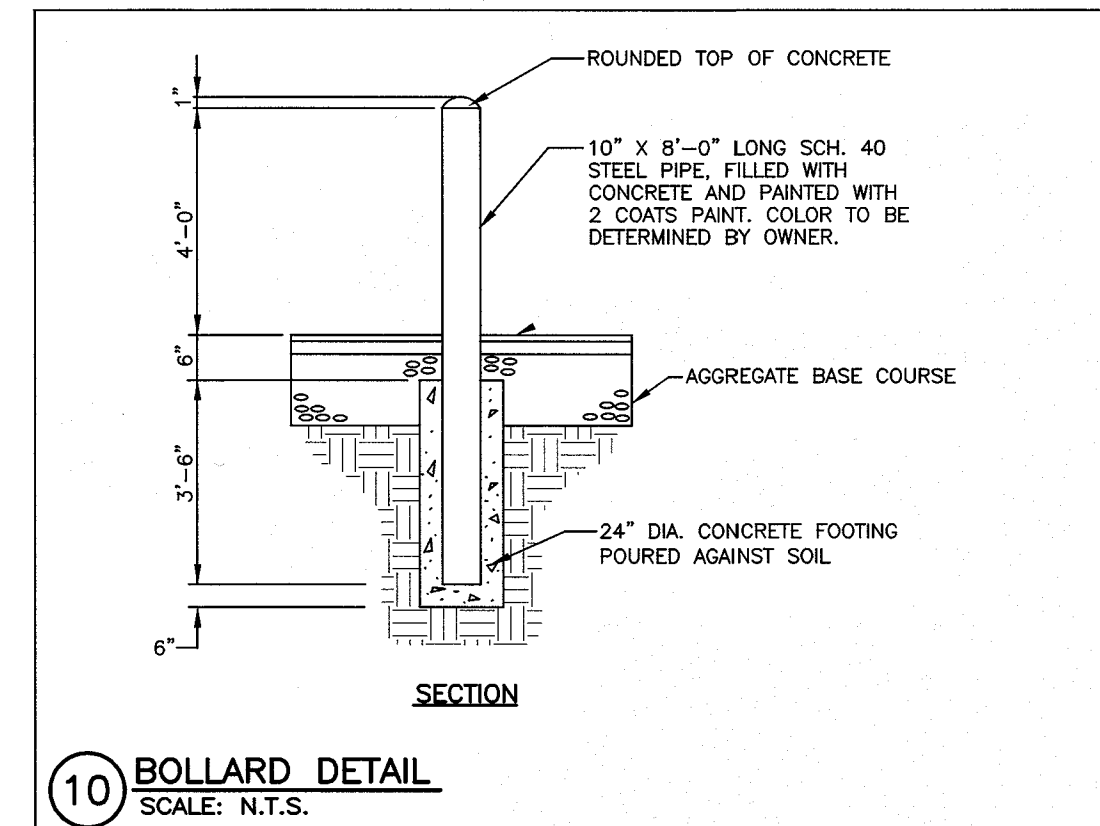
13 **HANDICAP PARKING SIGN**
SCALE: N.T.S.



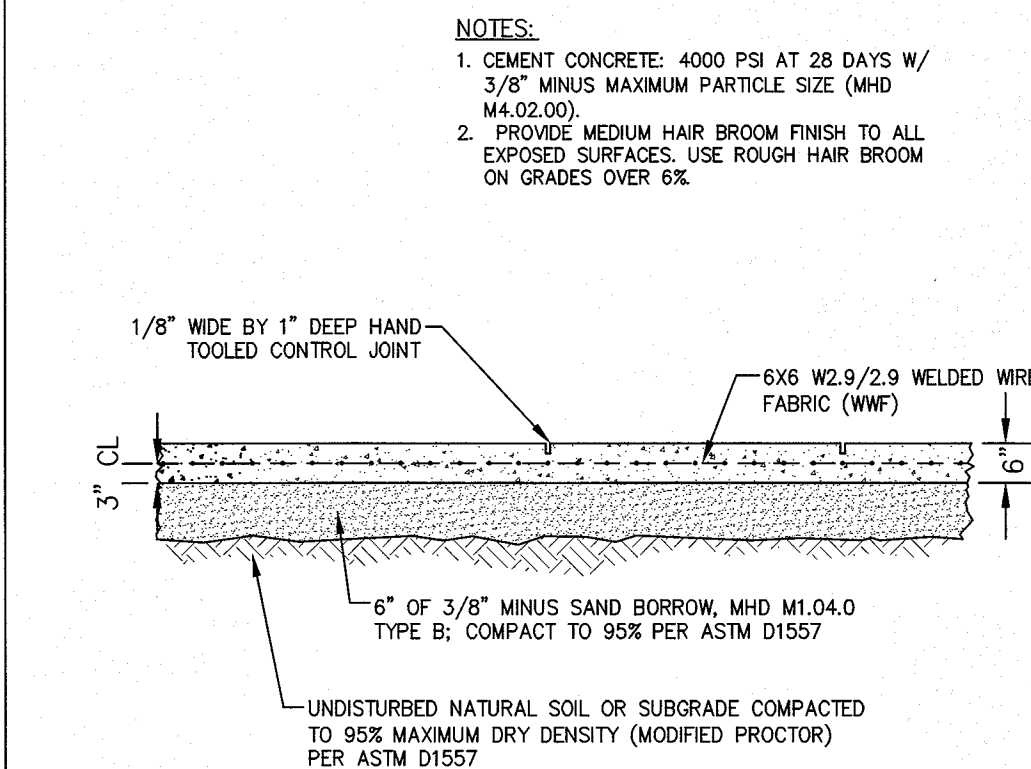
11 **CONSTRUCTION ENTRANCE**
SCALE: N.T.S.



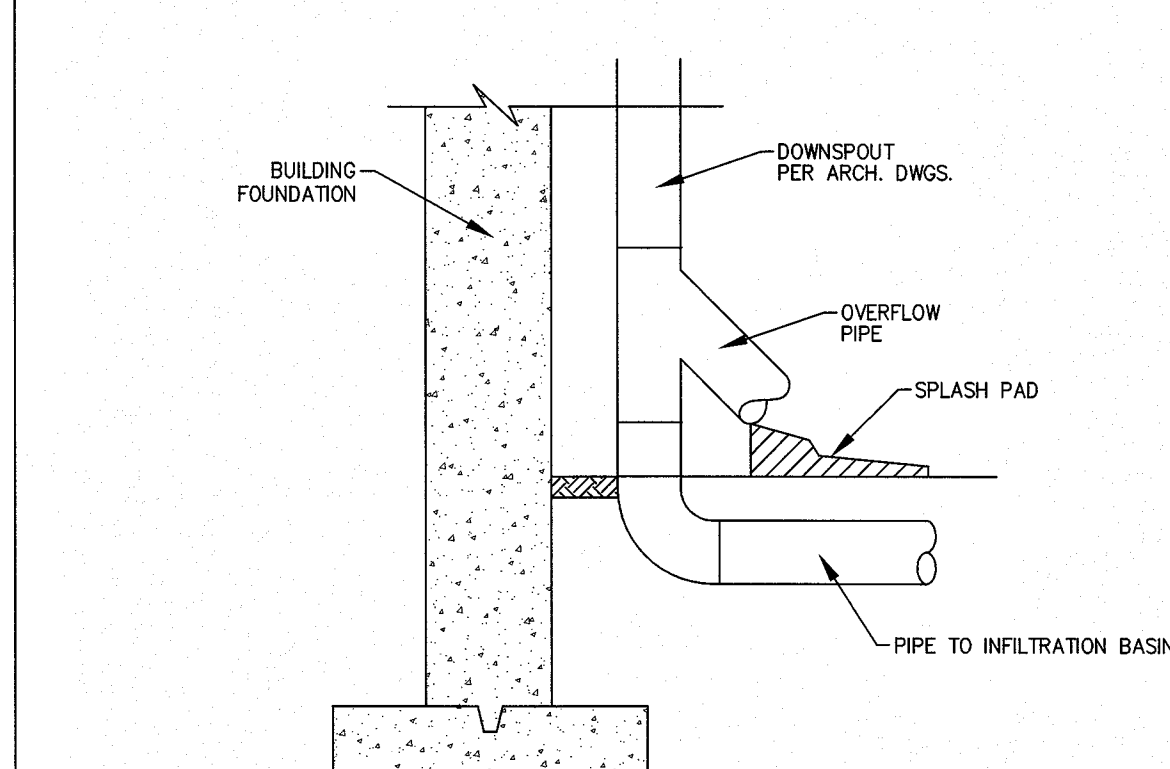
12 **HANDICAP PARKING SPACE**
SCALE: N.T.S.



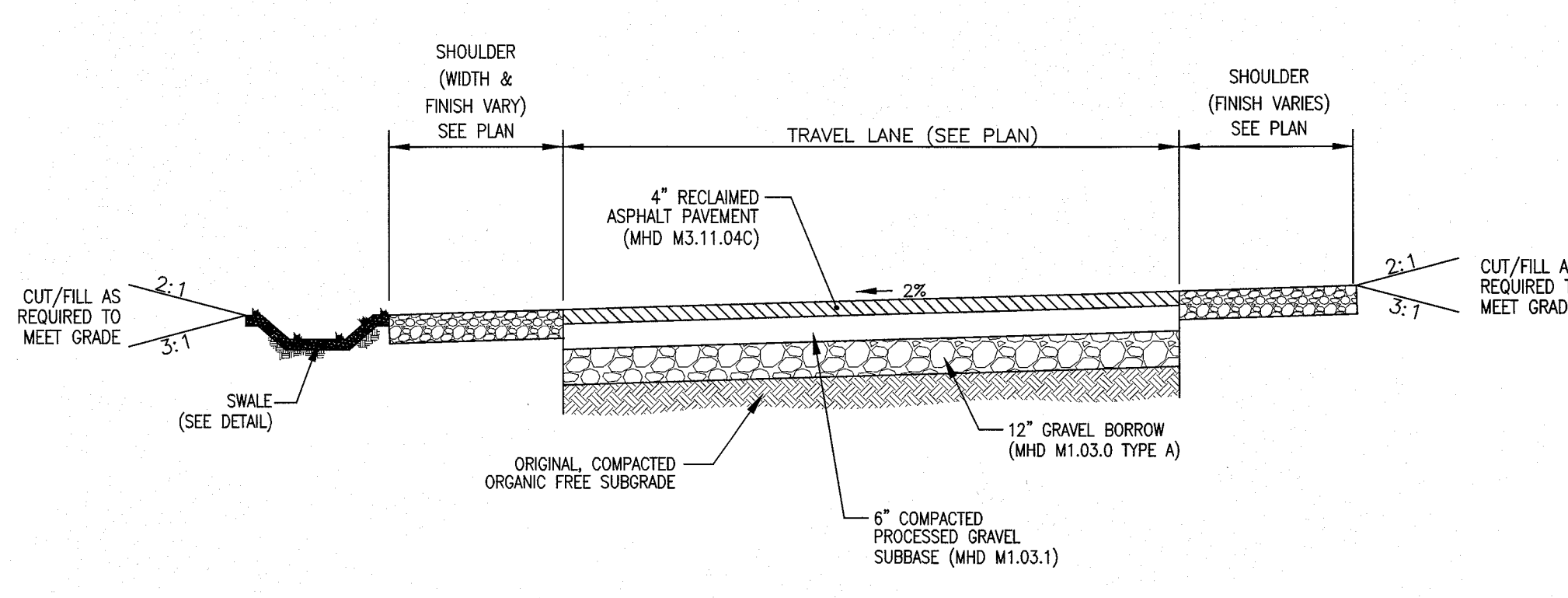
10 **BOLLARD DETAIL**
SCALE: N.T.S.



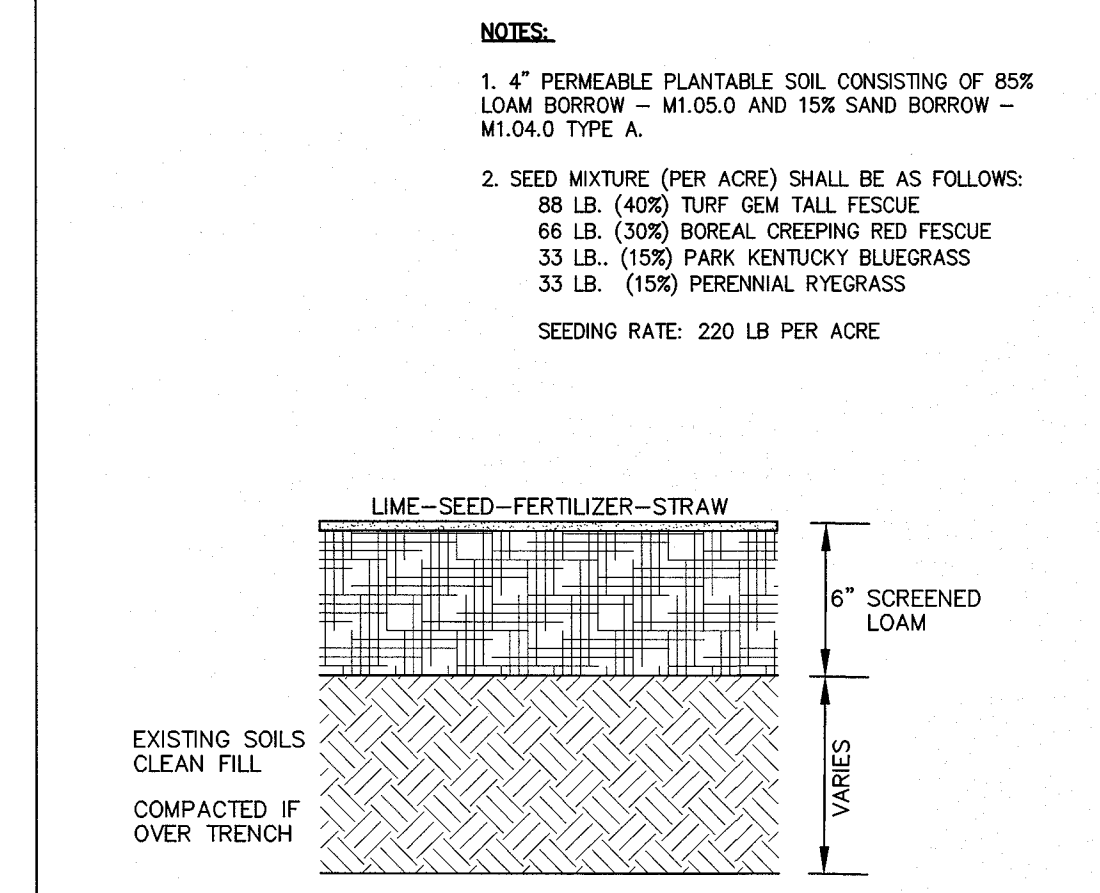
6 **CONCRETE SLAB**
SCALE: N.T.S.



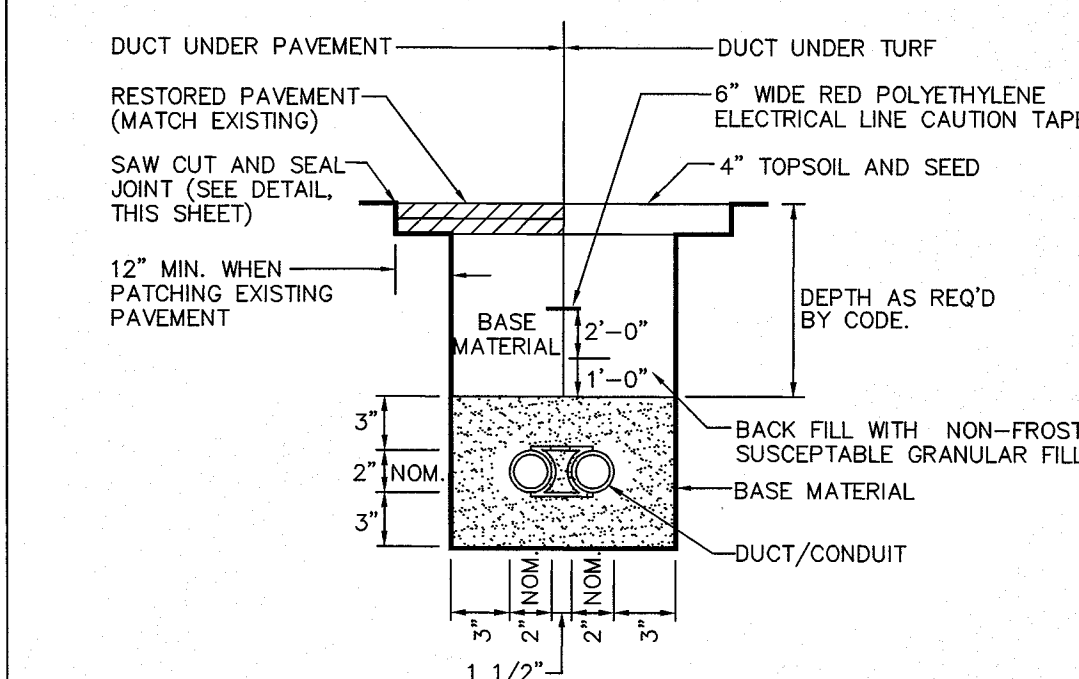
7 **ROOF LEADER CONNECTION**
SCALE: N.T.S.



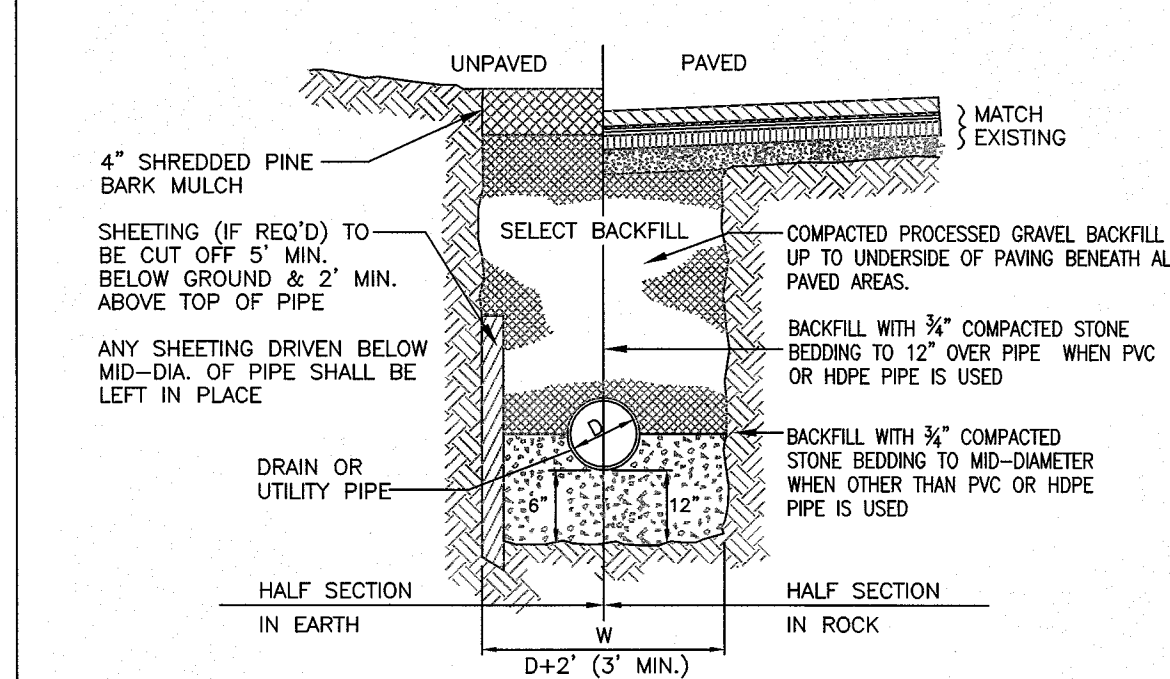
8 **TYPICAL ROADWAY CROSS SECTION**
SCALE: N.T.S.



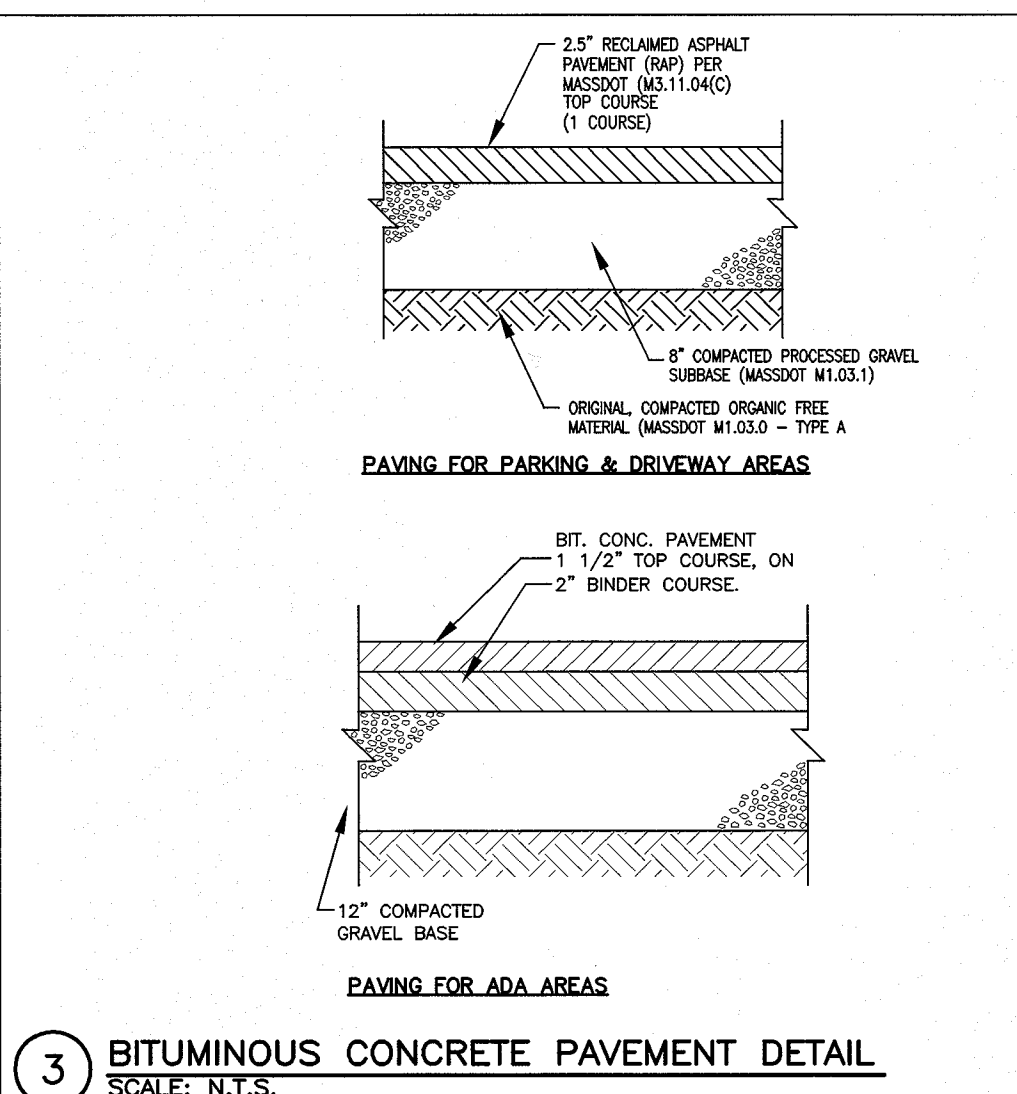
9 **LOAM & SEED DETAIL**
SCALE: N.T.S.



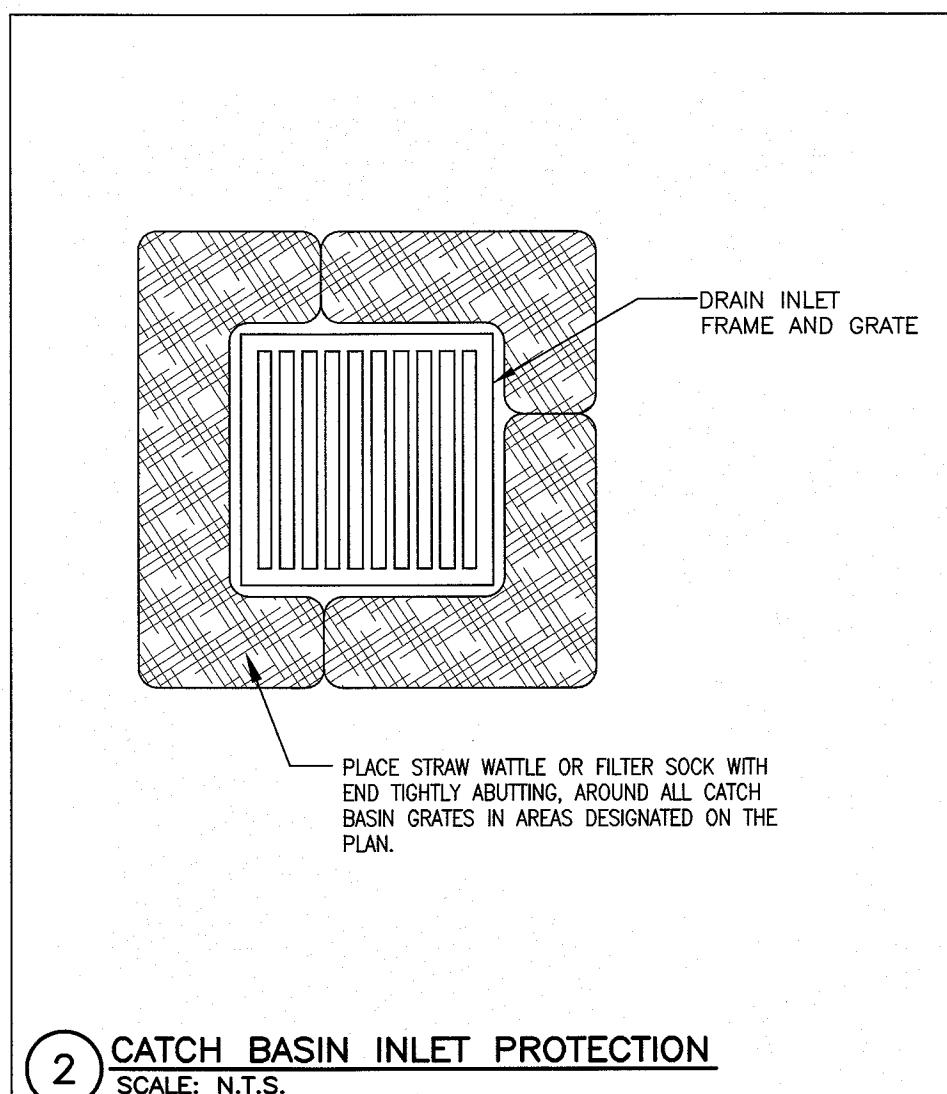
5 **UNENCASED DUCT/CONDUIT DETAIL**
SCALE: N.T.S.



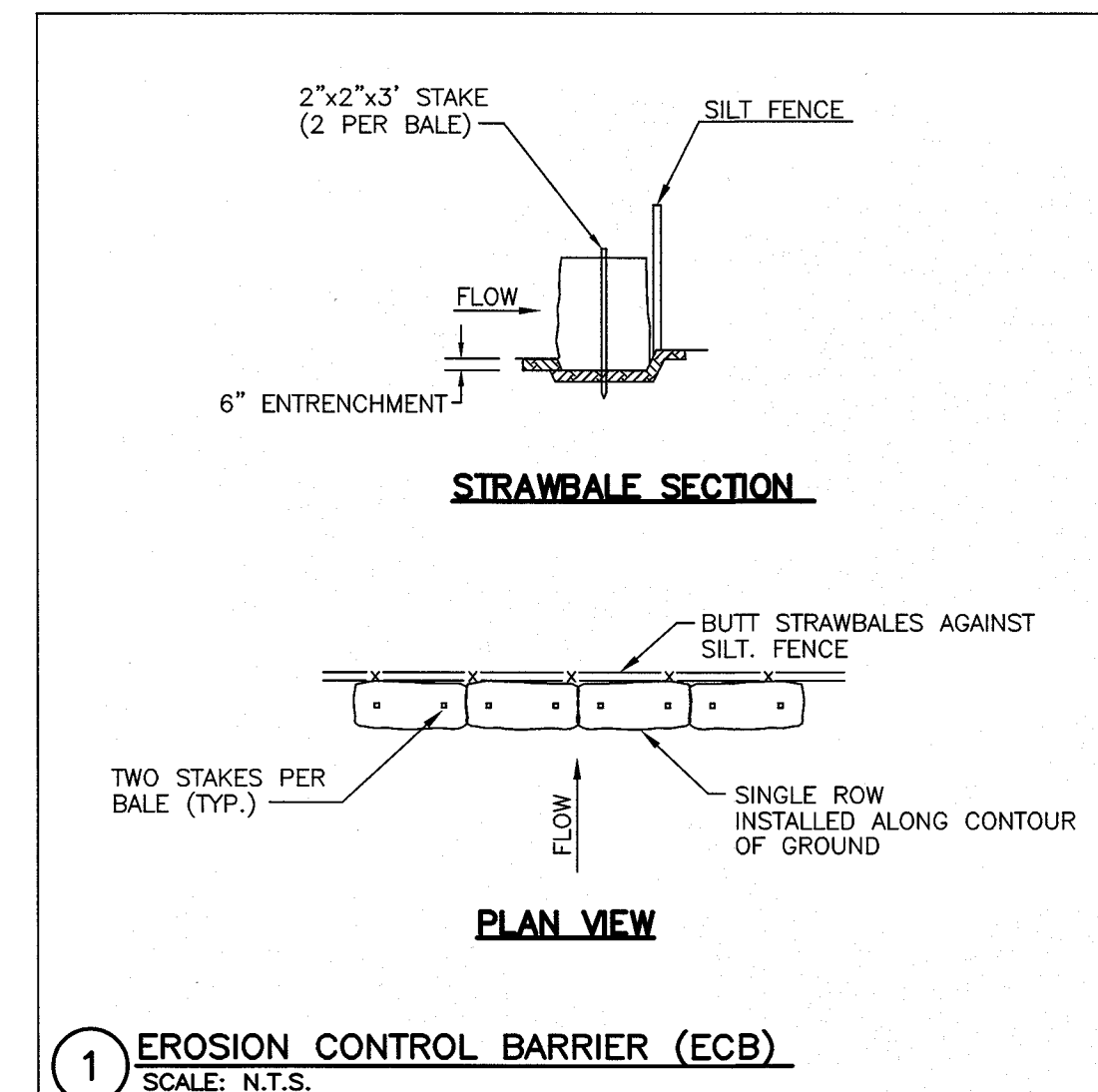
4 **TYPICAL UTILITY TRENCH DETAIL**
SCALE: N.T.S.



3 **BITUMINOUS CONCRETE PAVEMENT DETAIL**
SCALE: N.T.S.



2 **CATCH BASIN INLET PROTECTION**
SCALE: N.T.S.



1 **EROSION CONTROL BARRIER (ECB)**
SCALE: N.T.S.



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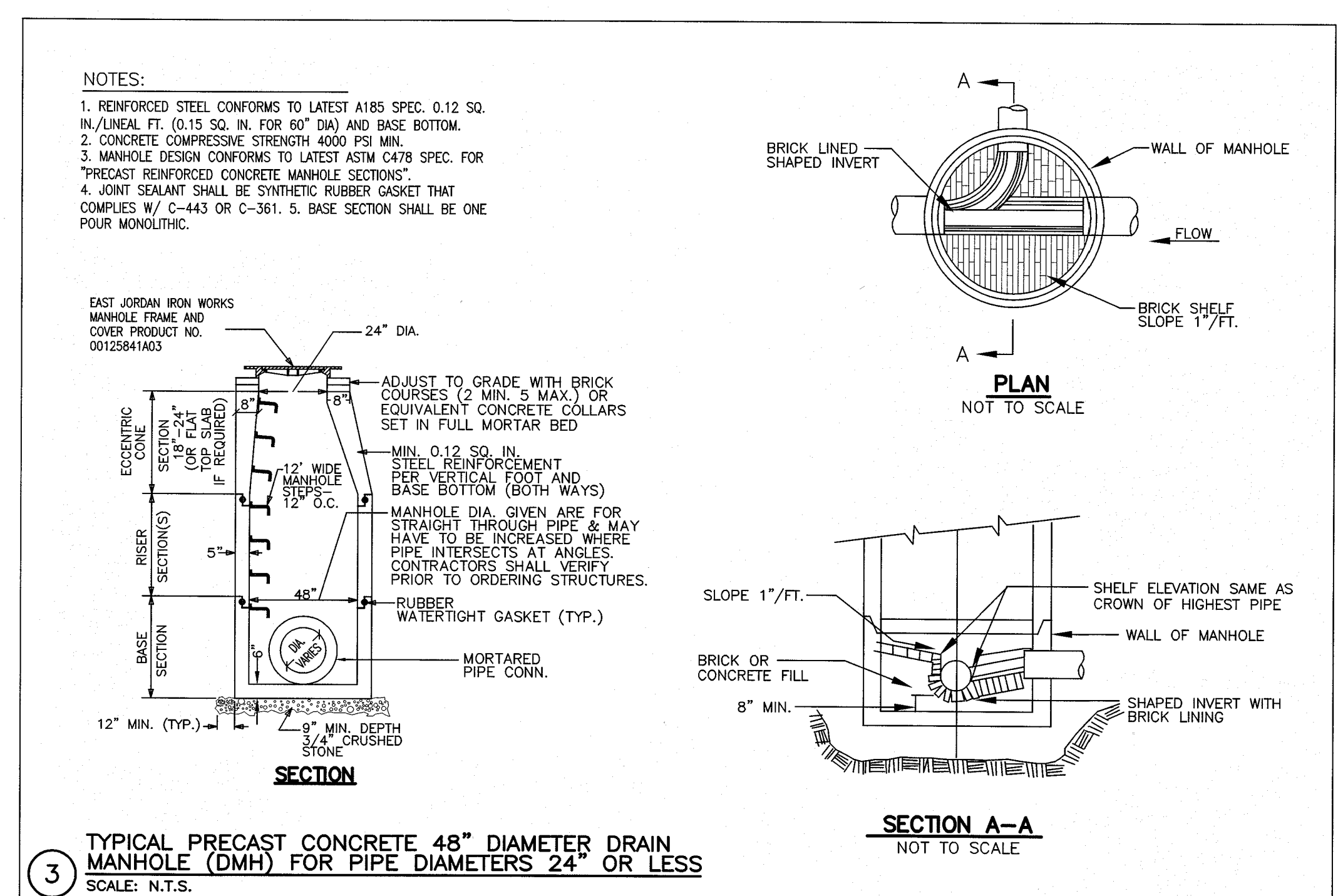
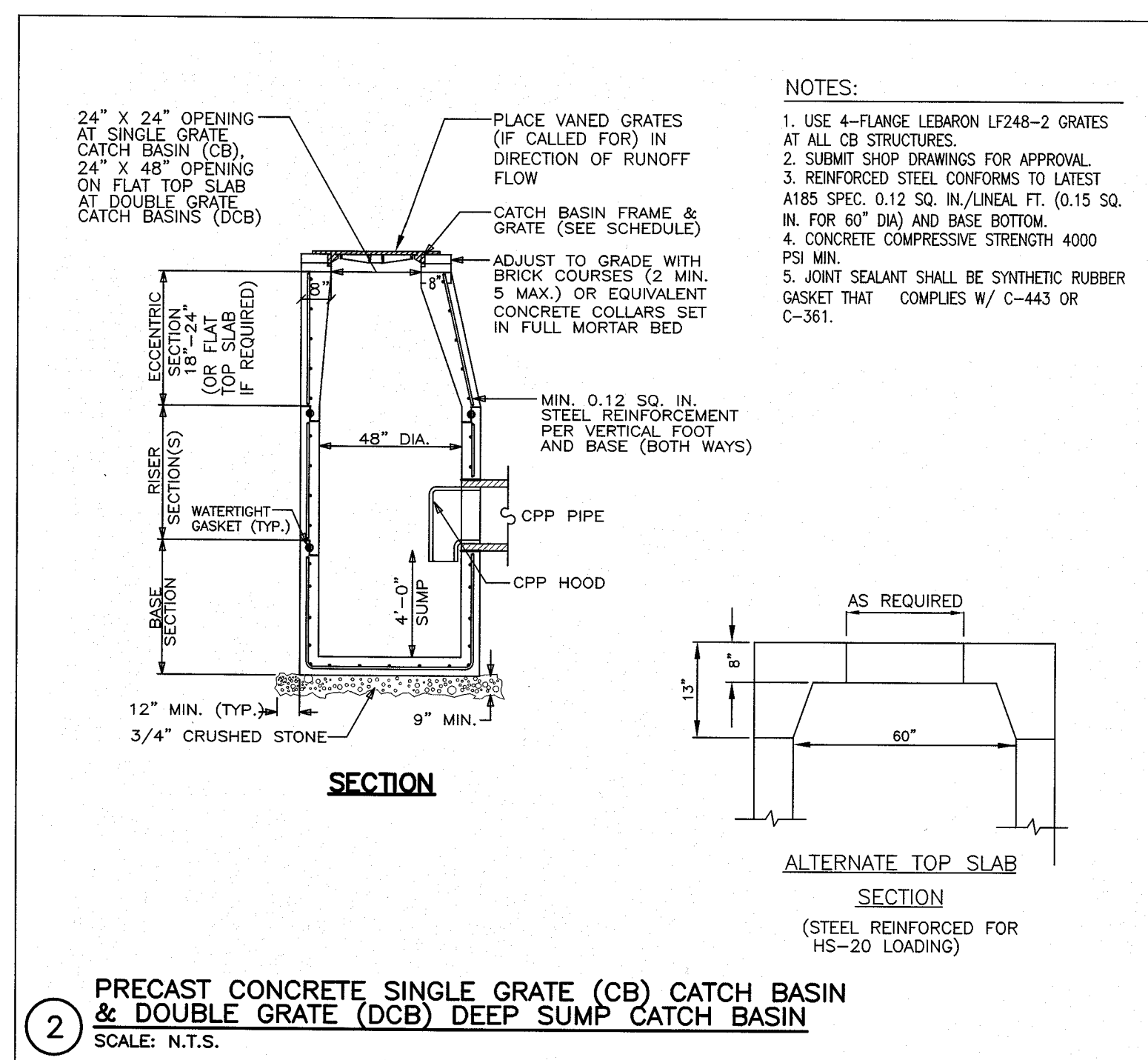
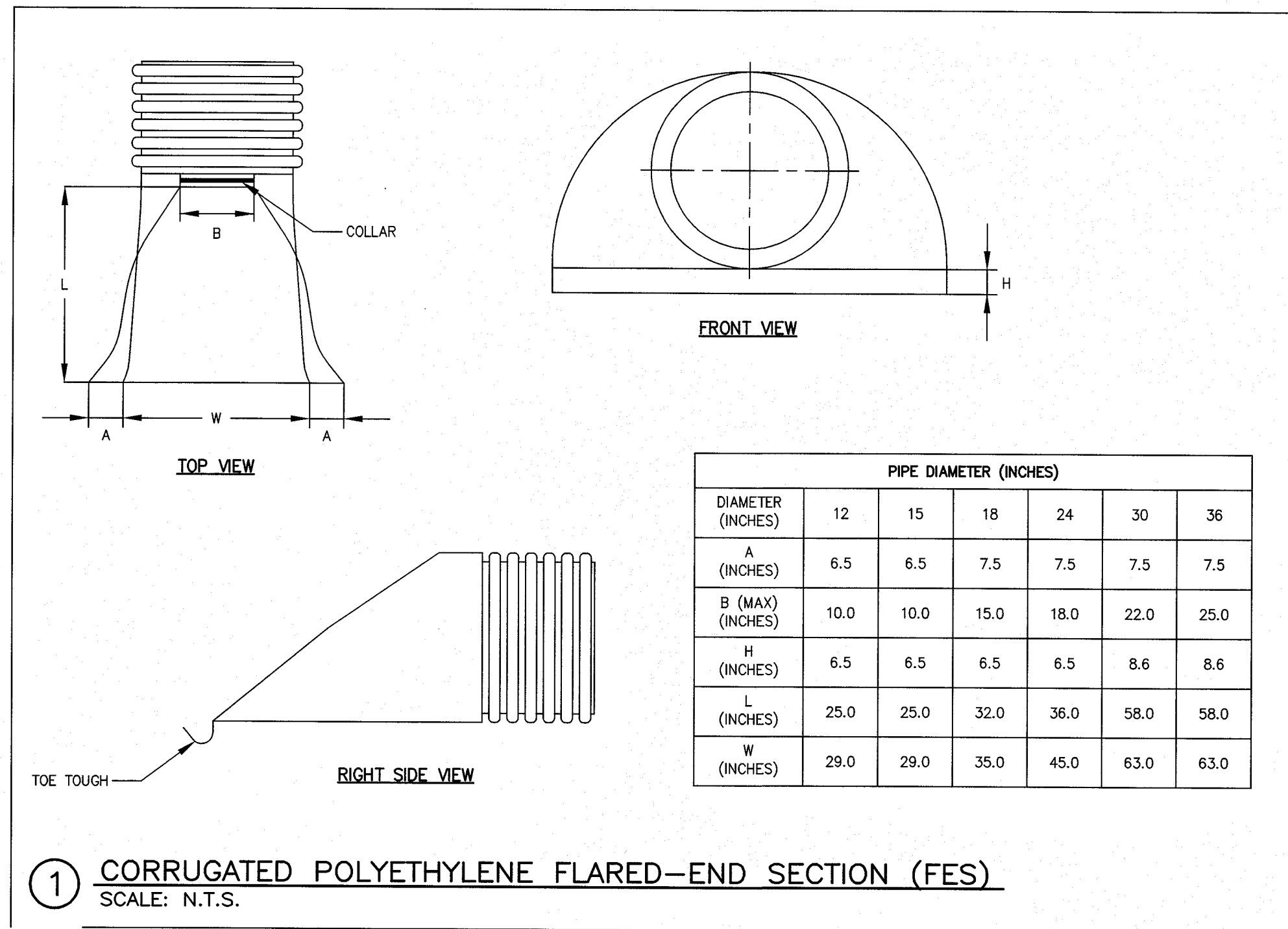
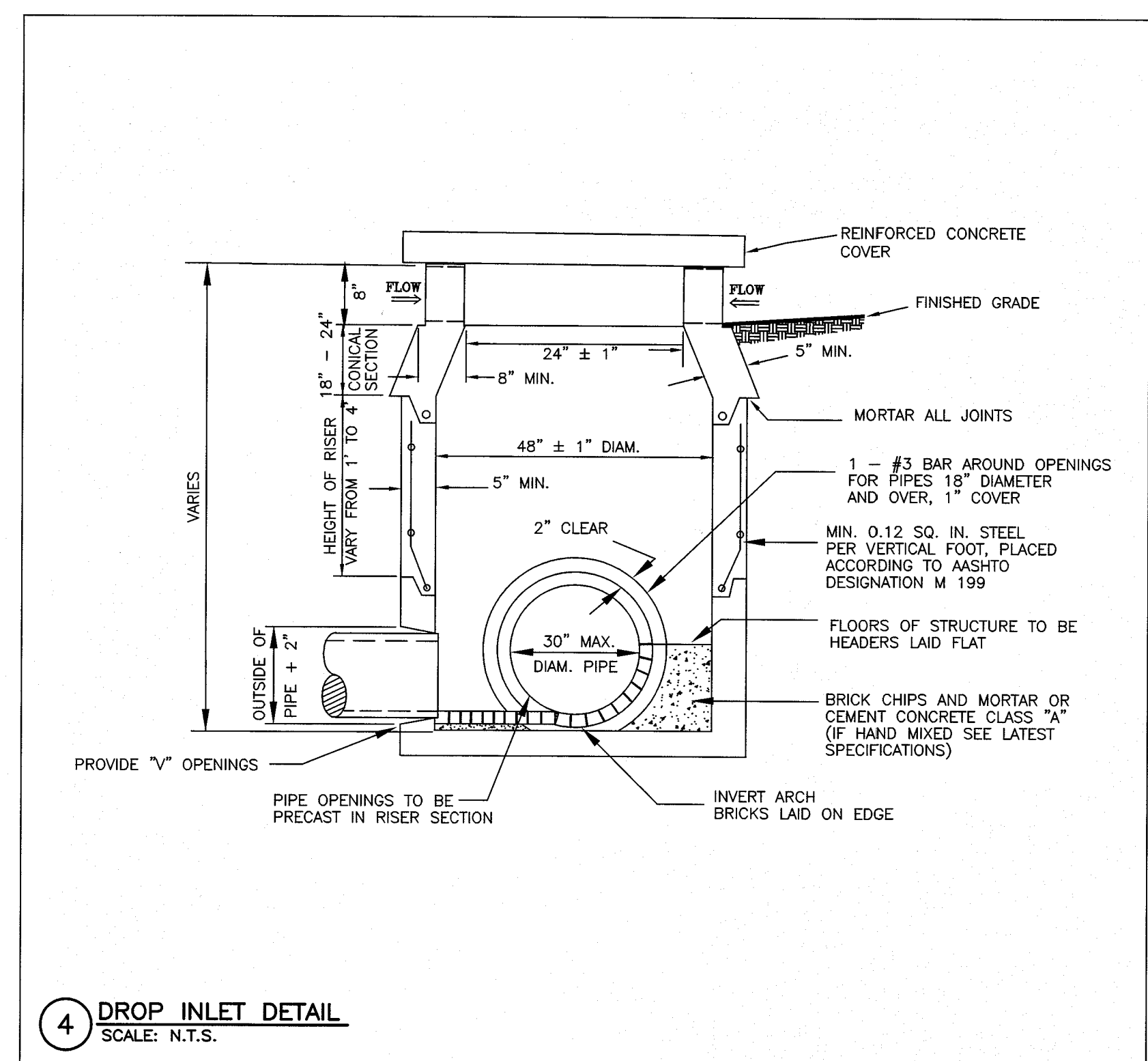
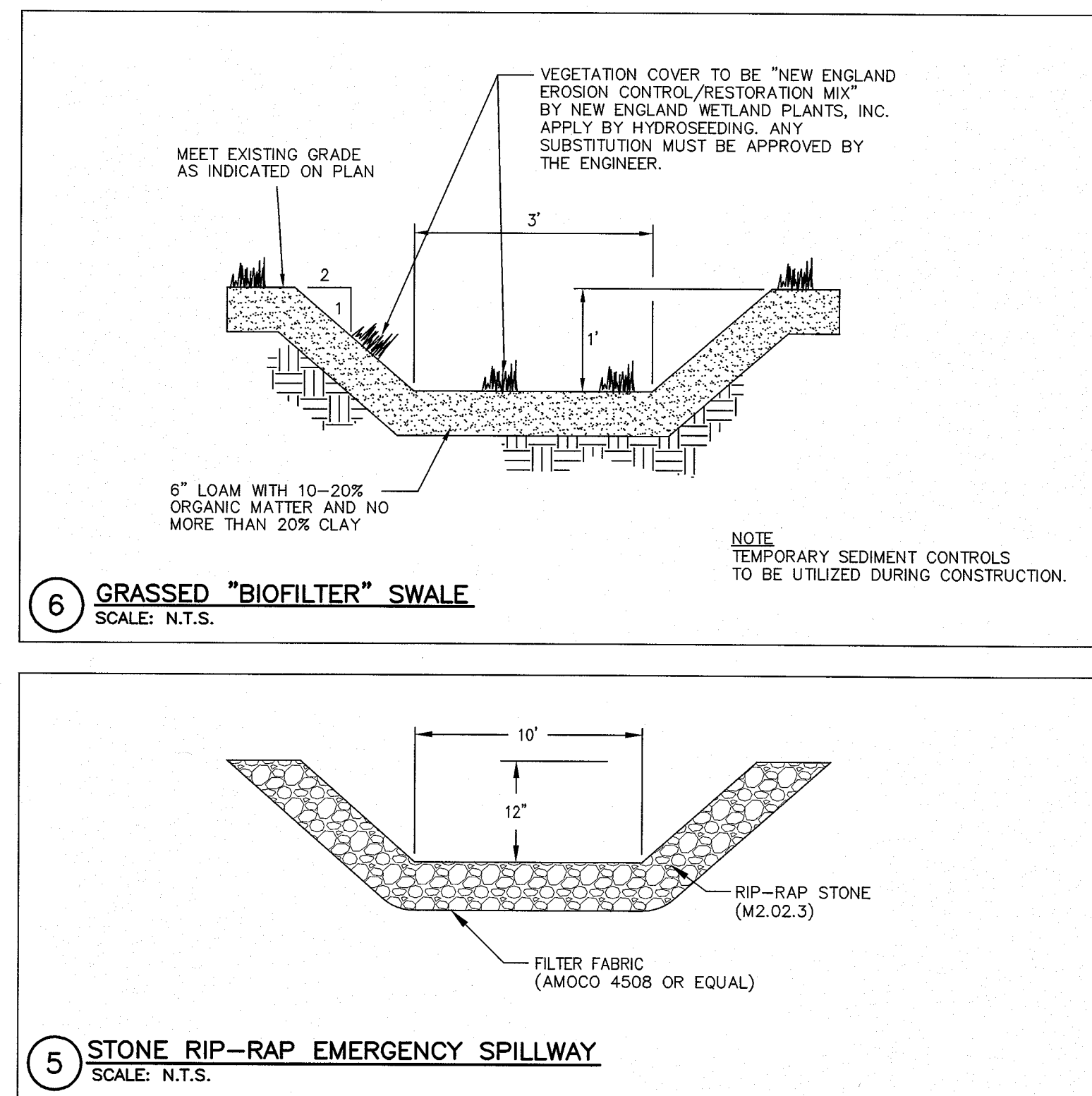
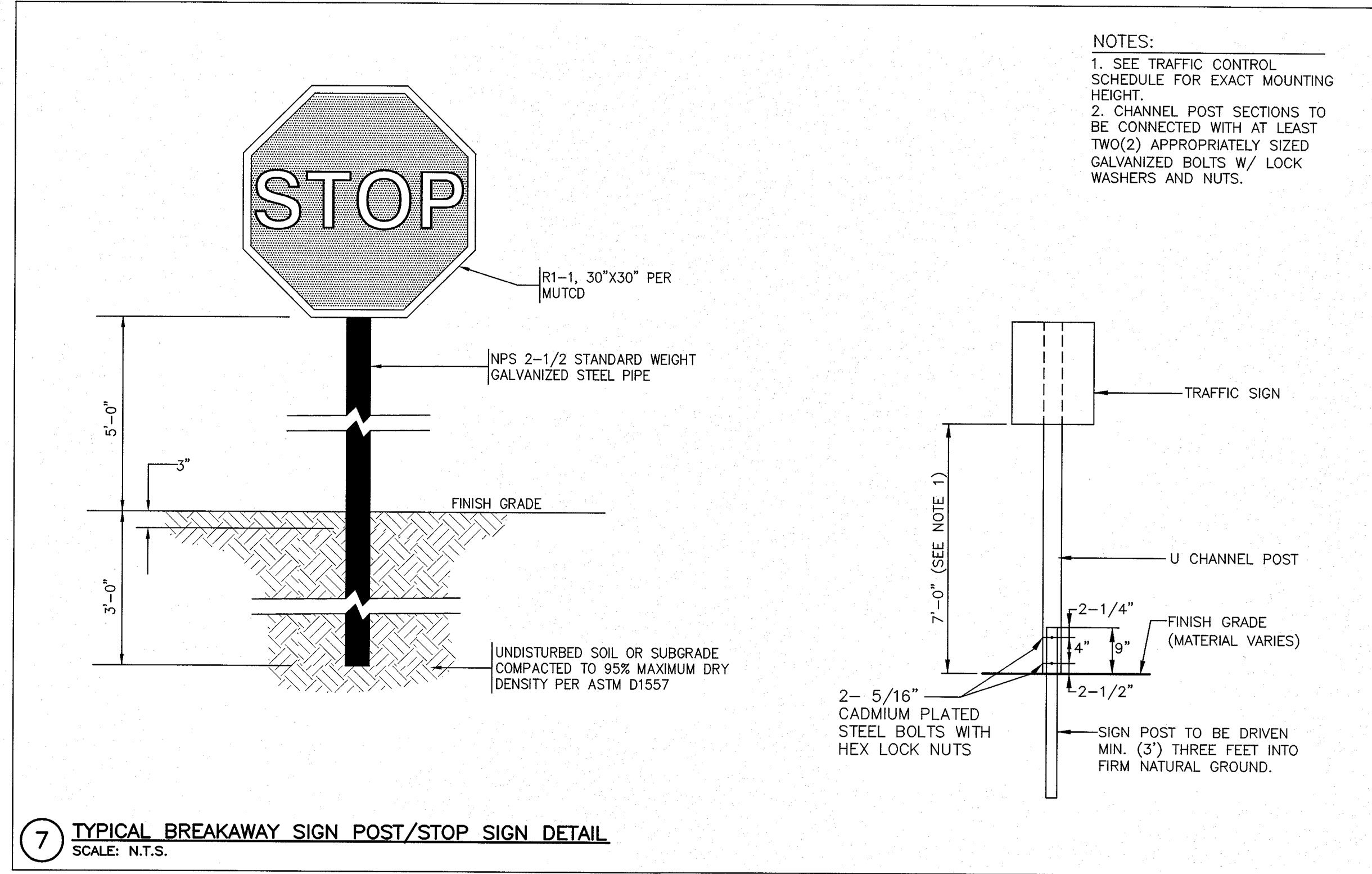
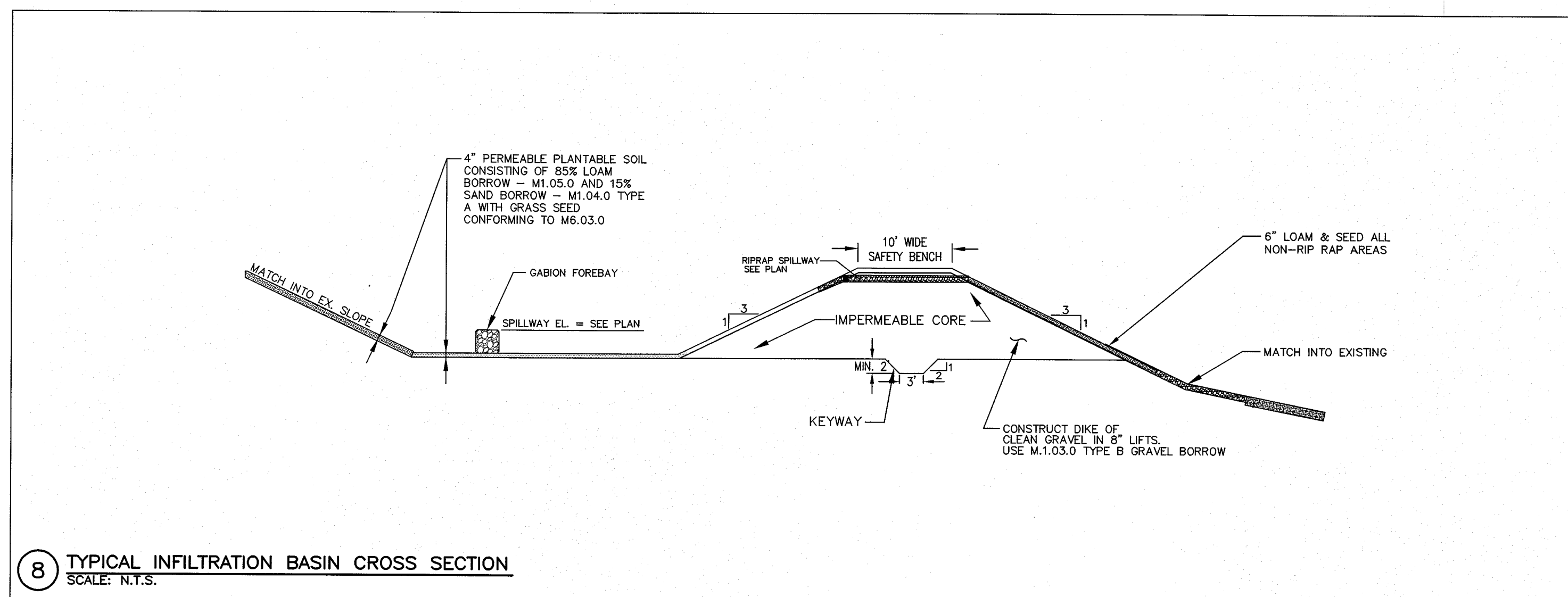
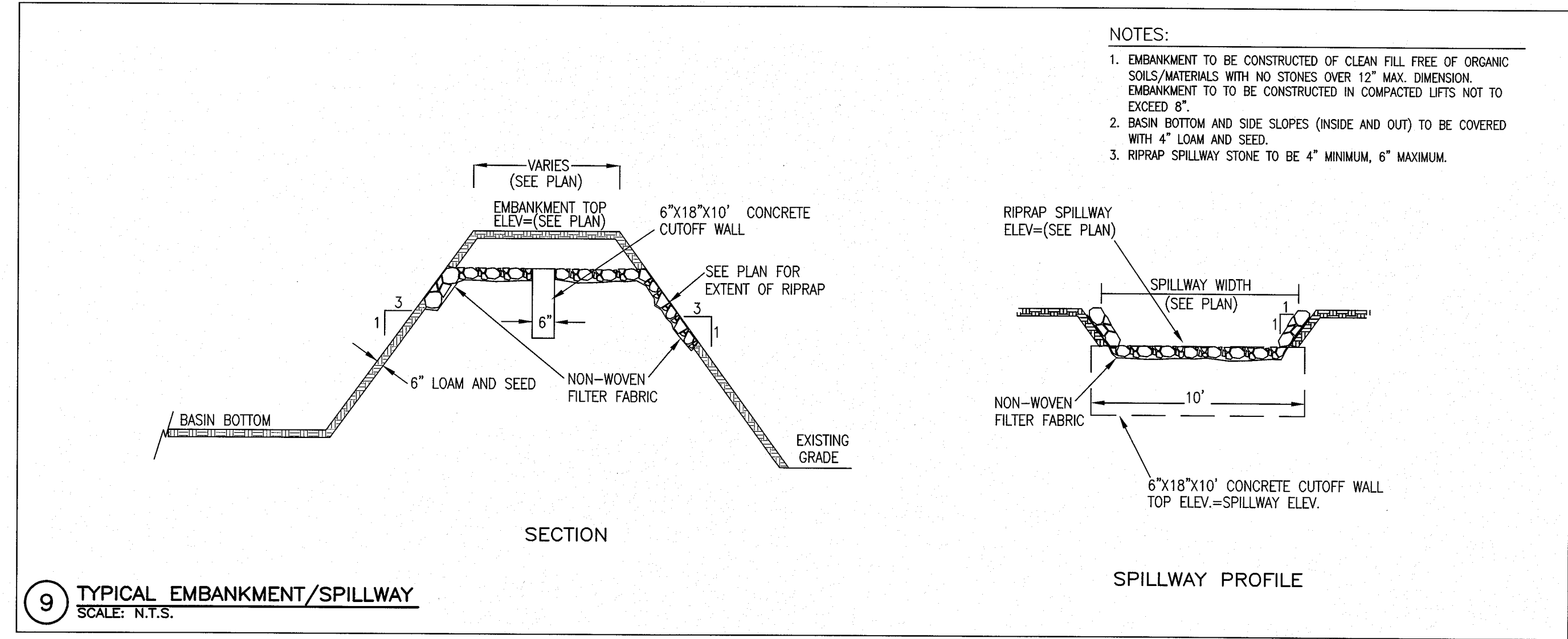
APPLICANT:
**COLLINGS FOUNDATION, INC.
P.O. BOX 248
STOW, MA 01775**

REVISIONS		
NO.	DATE	DESCRIPTION
1	4/22/15	PER REVIEW COMMENTS
2	5/18/15	PER REVIEW COMMENTS

CAD FILE	...\\dwg\\2014-021_SP-R6.dwg
DRAWN BY	TRB, SJO
CHECKED BY	PBH
DATE	JANUARY 20, 2015
PROJECT NO.	2014-021

SHEET TITLE
**CONSTRUCTION
DETAILS**
SHEET 1 OF 3

	DRAWING NO.
	C-6.1
PLAN NO. L-4403	



ASE
Andrews Survey & Engineering, Inc.
Land Surveying - Civil Engineering - Site Planning
P.O. Box 312, 104 Mendon Street
Uxbridge, Massachusetts 01569-0312
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STOW PLANNING BOARD.

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HUDSON PLANNING BOARD.

BEING A MAJORITY DATE:

PROJECT: THE COLLINGS FOUNDATION
SITE DEVELOPMENT PLAN
137 BARTON ROAD
STOW, MA 01775

APPLICANT: COLLINGS FOUNDATION, INC.
P.O. BOX 248
STOW, MA 01775

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CHECKED BY: PBH

DATE: JANUARY 20, 2015

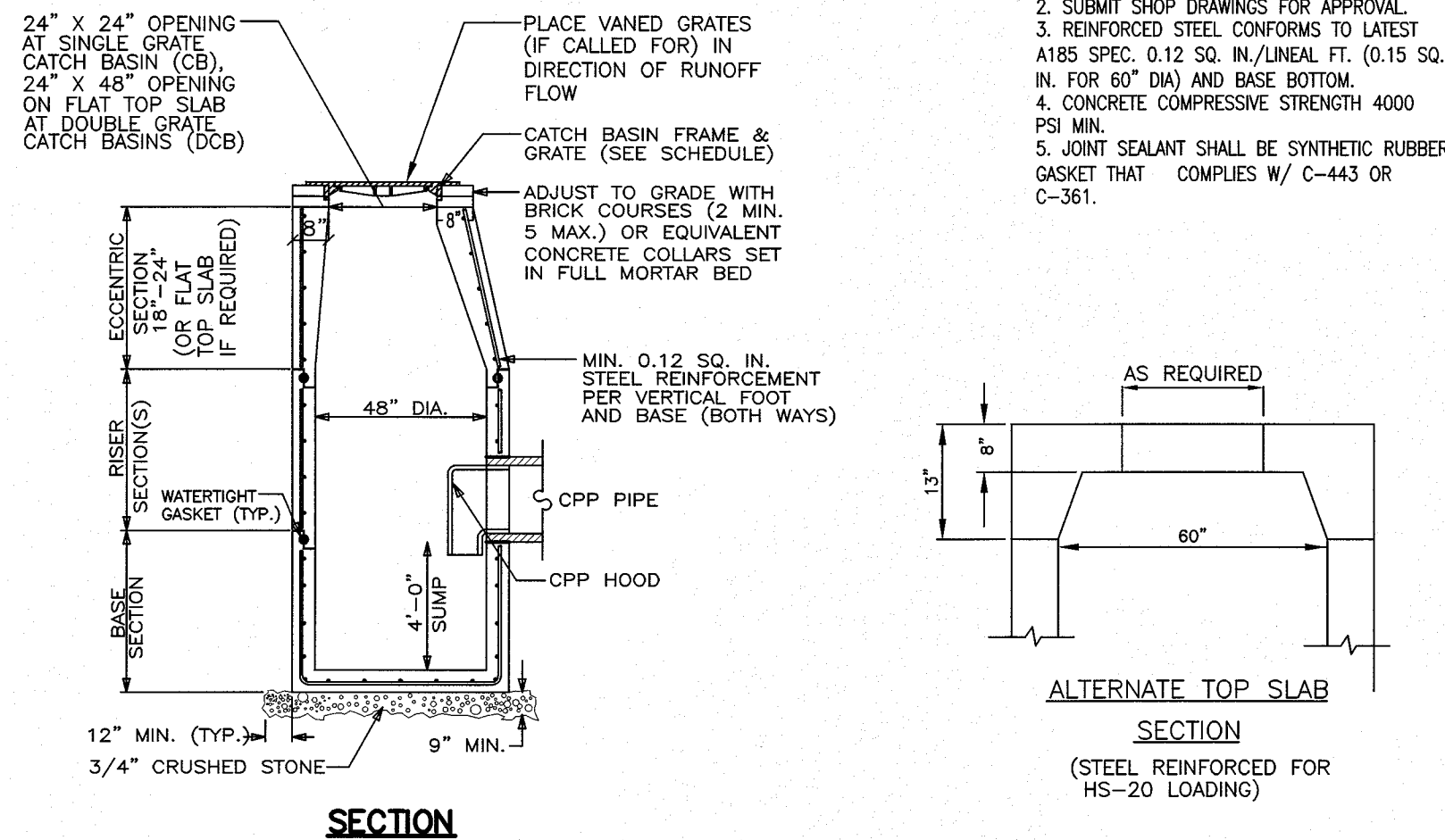
PROJECT NO: 2014-021

SHEET TITLE: CONSTRUCTION DETAILS

SHEET 2 OF 3

DRAWING NO: C-6.2

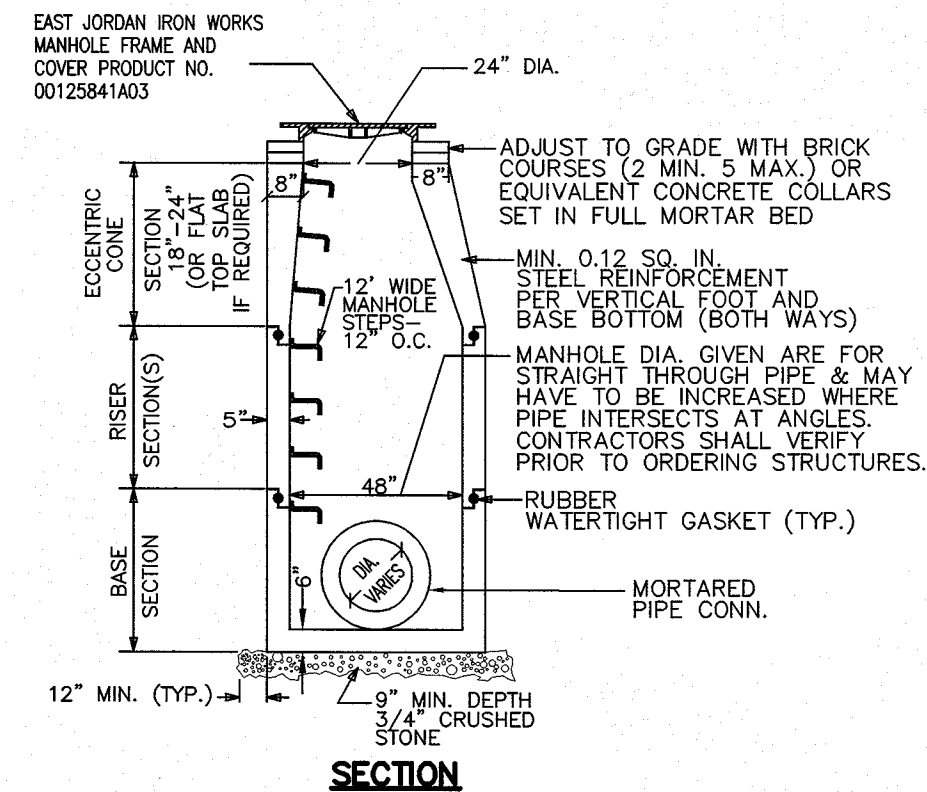
PLAN NO: L-4403



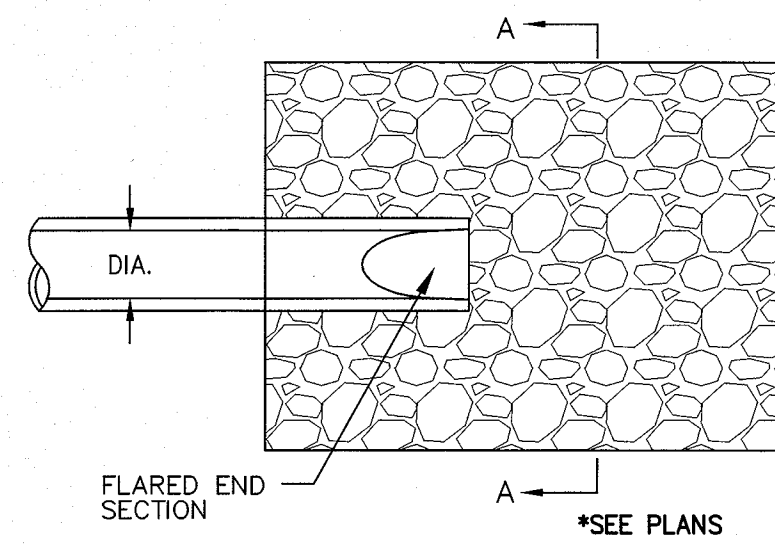
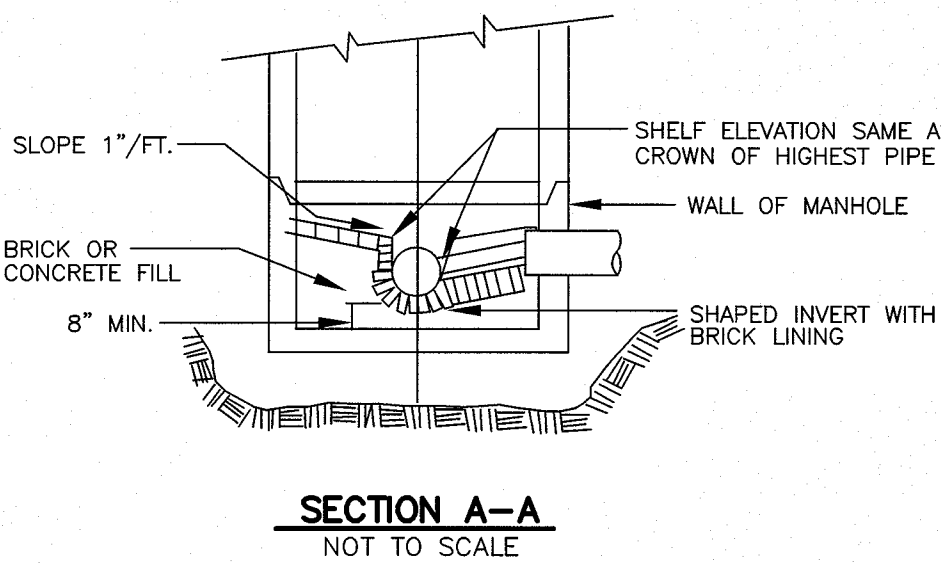
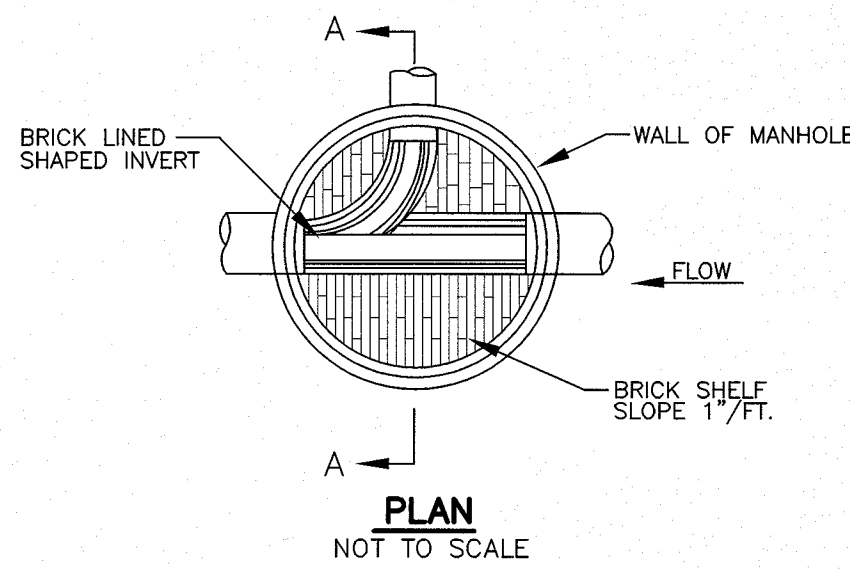
3 PRECAST CONCRETE SINGLE GRATE (CB) CATCH BASIN & DOUBLE GRATE (DCB) DEEP SUMP CATCH BASIN
SCALE: N.T.S.

NOTES:

1. REINFORCED STEEL CONFORMS TO LATEST A185 SPEC. 0.12 SQ. IN./LINEAL FT. (0.15 SQ. IN. FOR 60\"/>

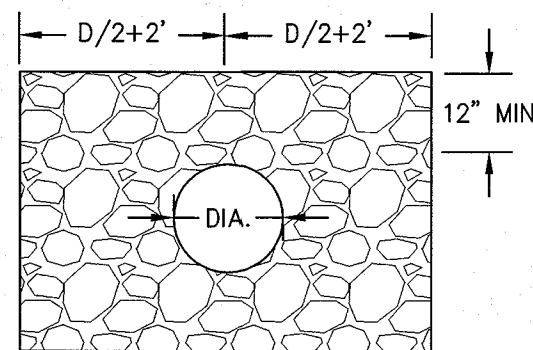


4 TYPICAL PRECAST CONCRETE 48\"/>



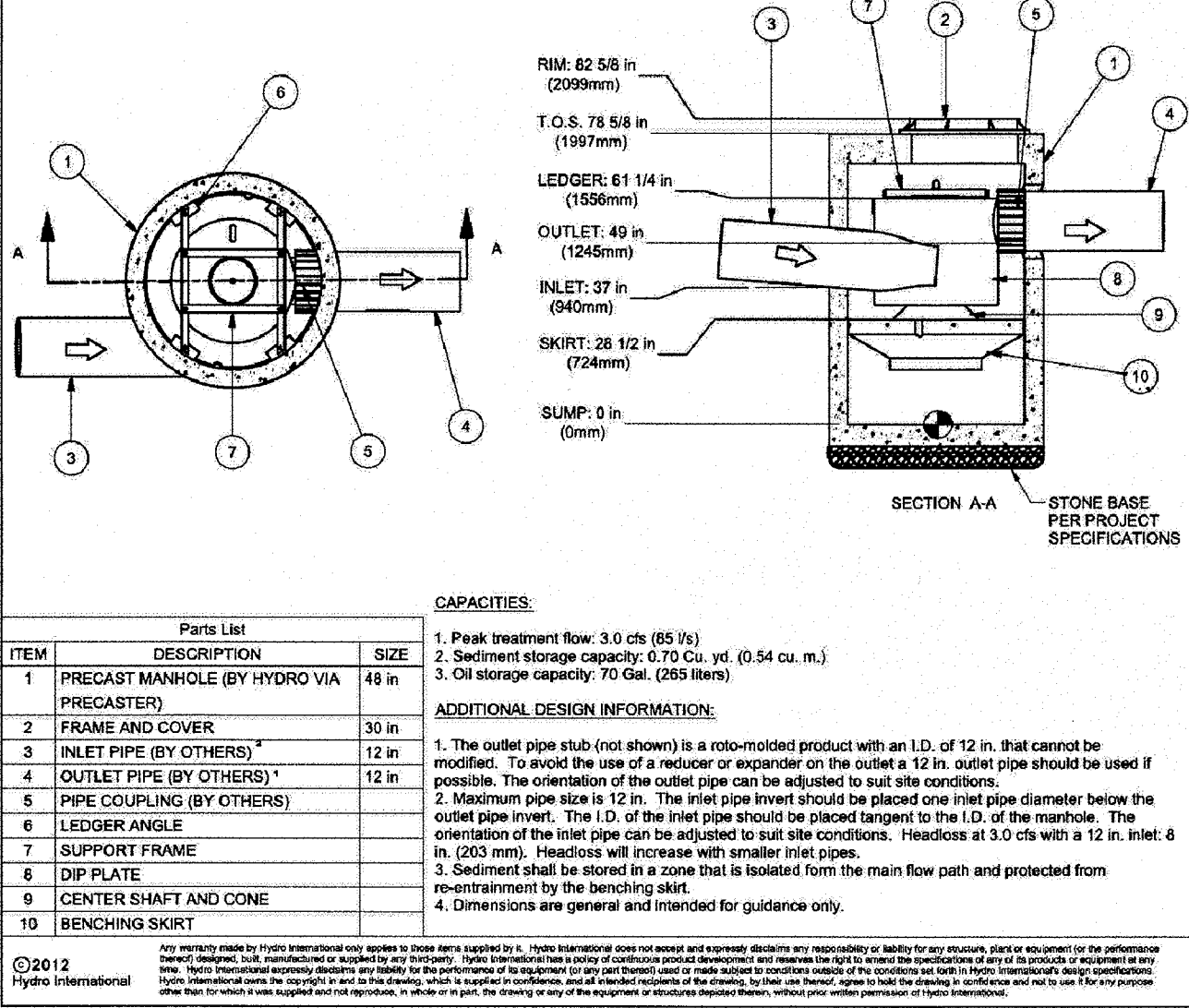
NOTES:

1. MINIMUM STONE DIAMETER: 6\"/>

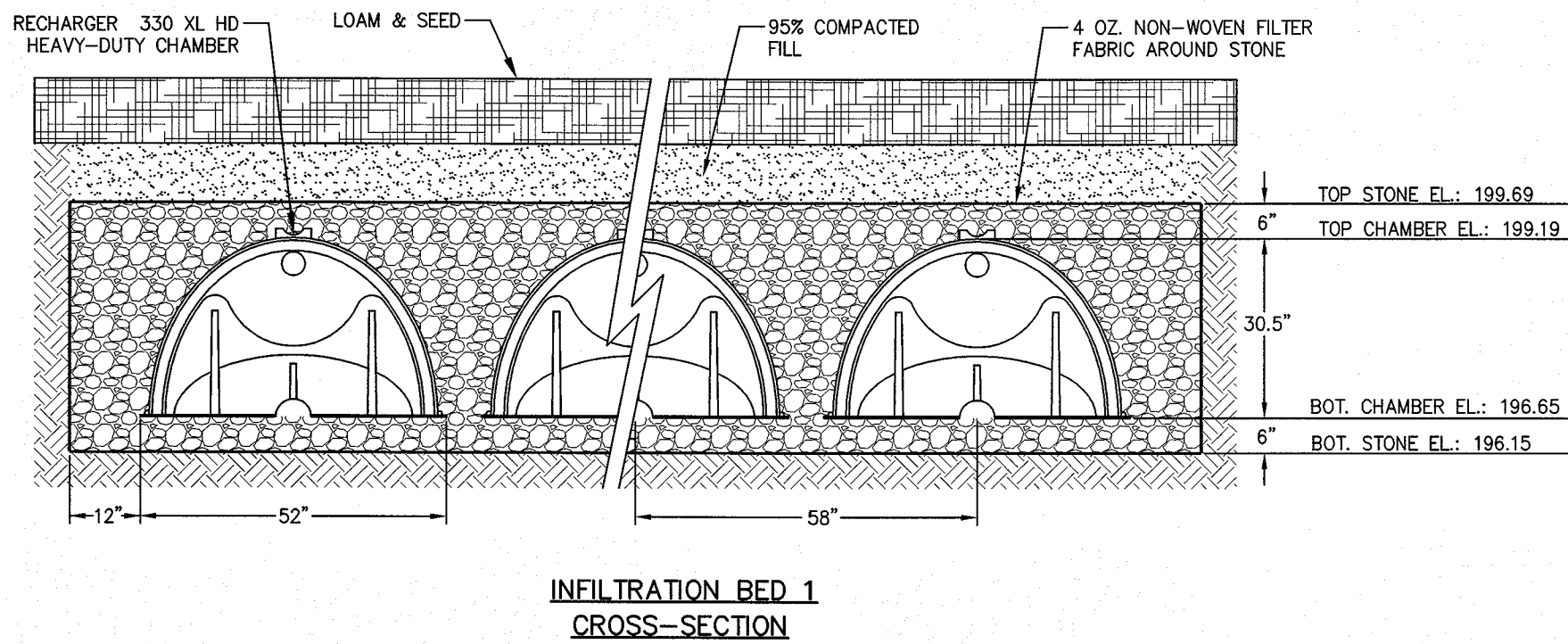


5 STONE RIP-RAP FOR PIPE ENDS
SCALE: N.T.S.

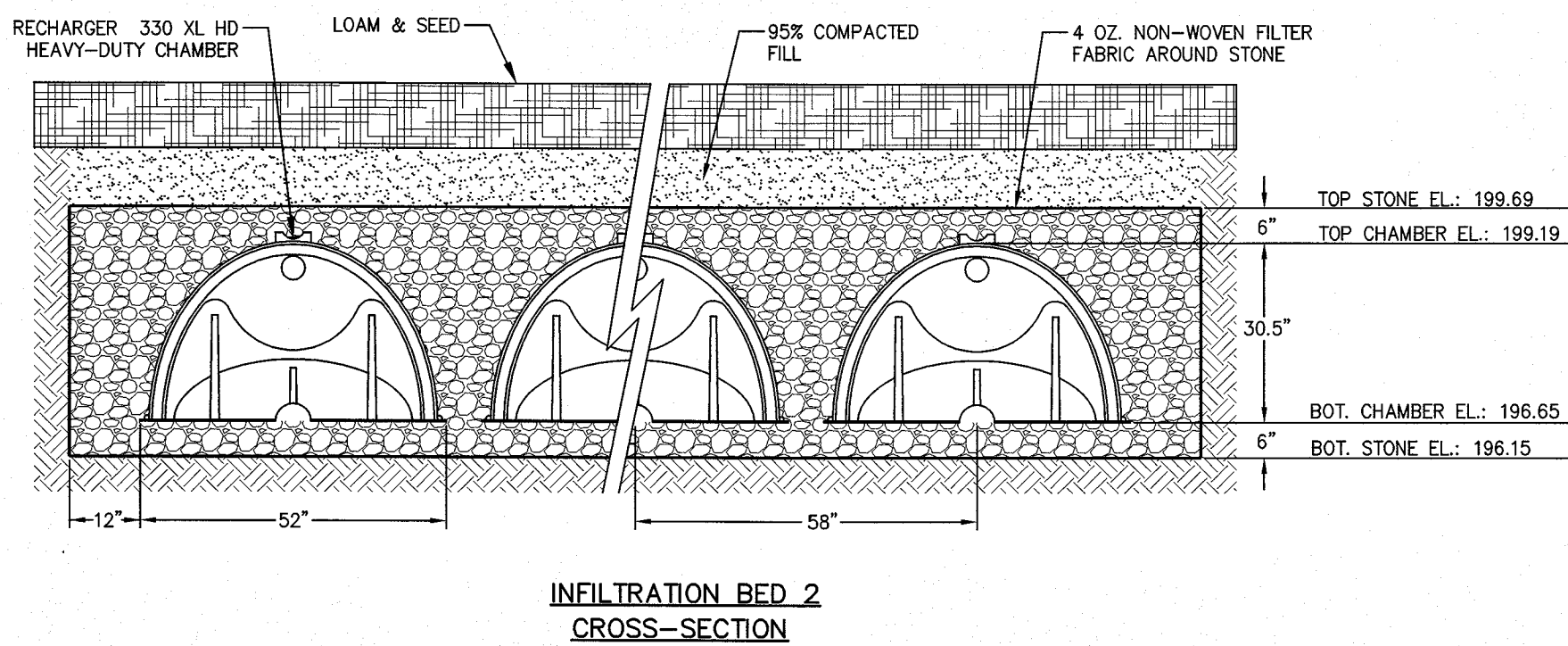
NOT FOR CONSTRUCTION - CONTACT HYDRO INTERNATIONAL FOR SITE SPECIFIC DRAWINGS



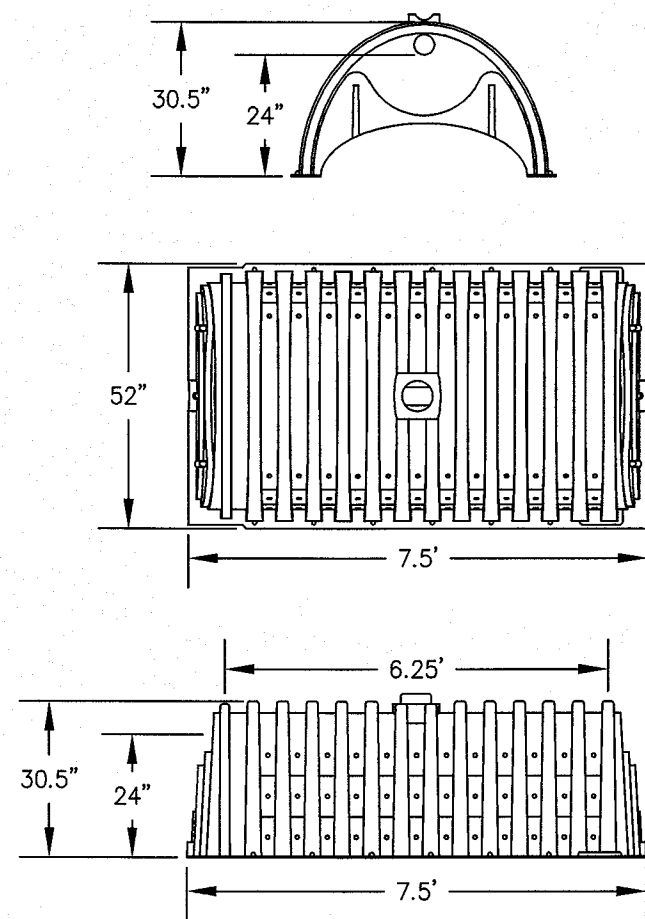
2 DOWNSTREAM DEFENDER DETAIL
SCALE: N.T.S.



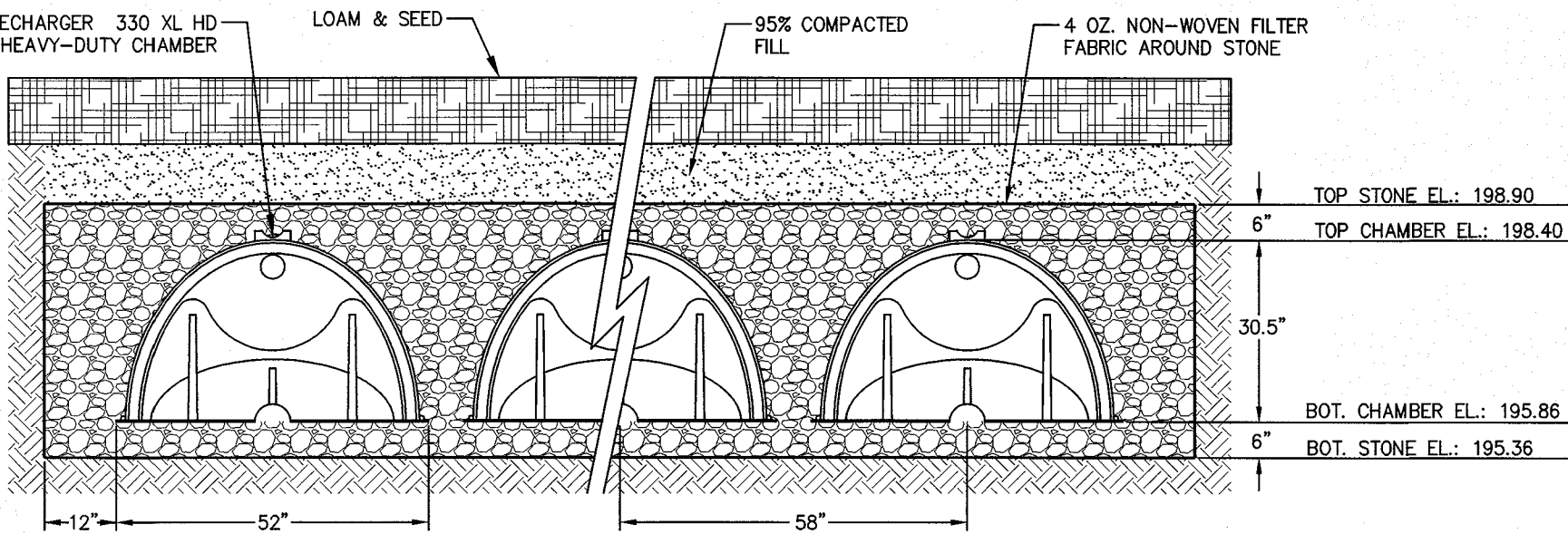
INFILTRATION BED 1
CROSS-SECTION



INFILTRATION BED 2
CROSS-SECTION



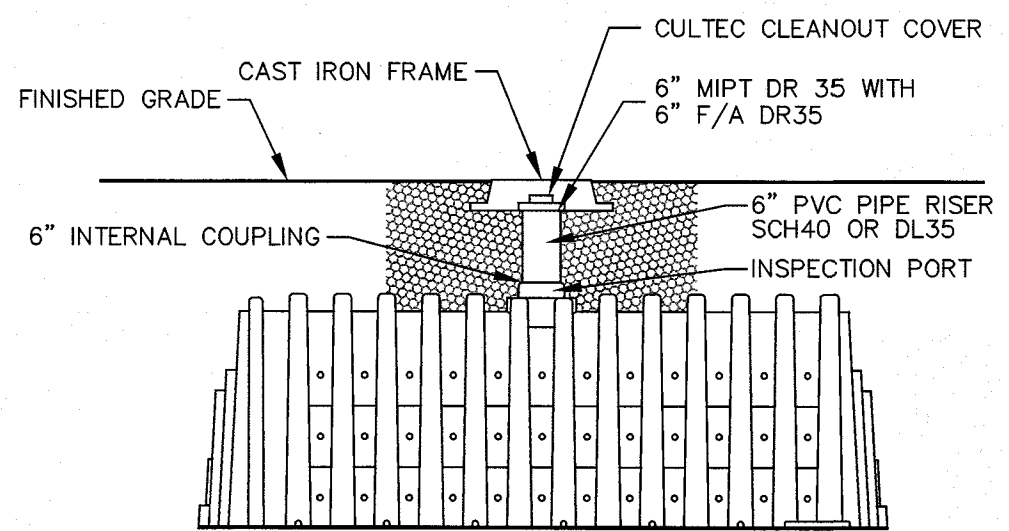
CHAMBER SECTION VIEWS



INFILTRATION BED 3
CROSS-SECTION

NOTES:

1. USE RECHARGER 330HD AS MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT, OR APPROVED EQUAL.
2. ALL RECHARGER CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
3. CALCULATIONS ARE BASED ON 40% STONE VOID.
4. CLEANOUT PORTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.



INSPECTION PORT



Andrews Survey & Engineering, Inc.
Land Surveying - Civil Engineering - Site Planning

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HUDSON PLANNING BOARD

BEING A MAJORITY DATE:

PROJECT:
THE COLLINGS FOUNDATION
SITE DEVELOPMENT PLAN
137 BARTON ROAD
STOW, MA 01775

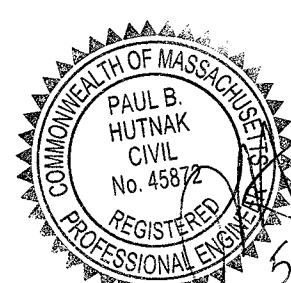
APPLICANT:
COLLINGS FOUNDATION, INC.
P.O. BOX 248
STOW, MA 01775

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DRAWN BY: TRB, SJO
CHECKED BY: PBH
DATE: JANUARY 20, 2015
PROJECT NO.: 2014-021

CONSTRUCTION DETAILS FOR FULL SITE BUILD-OUT

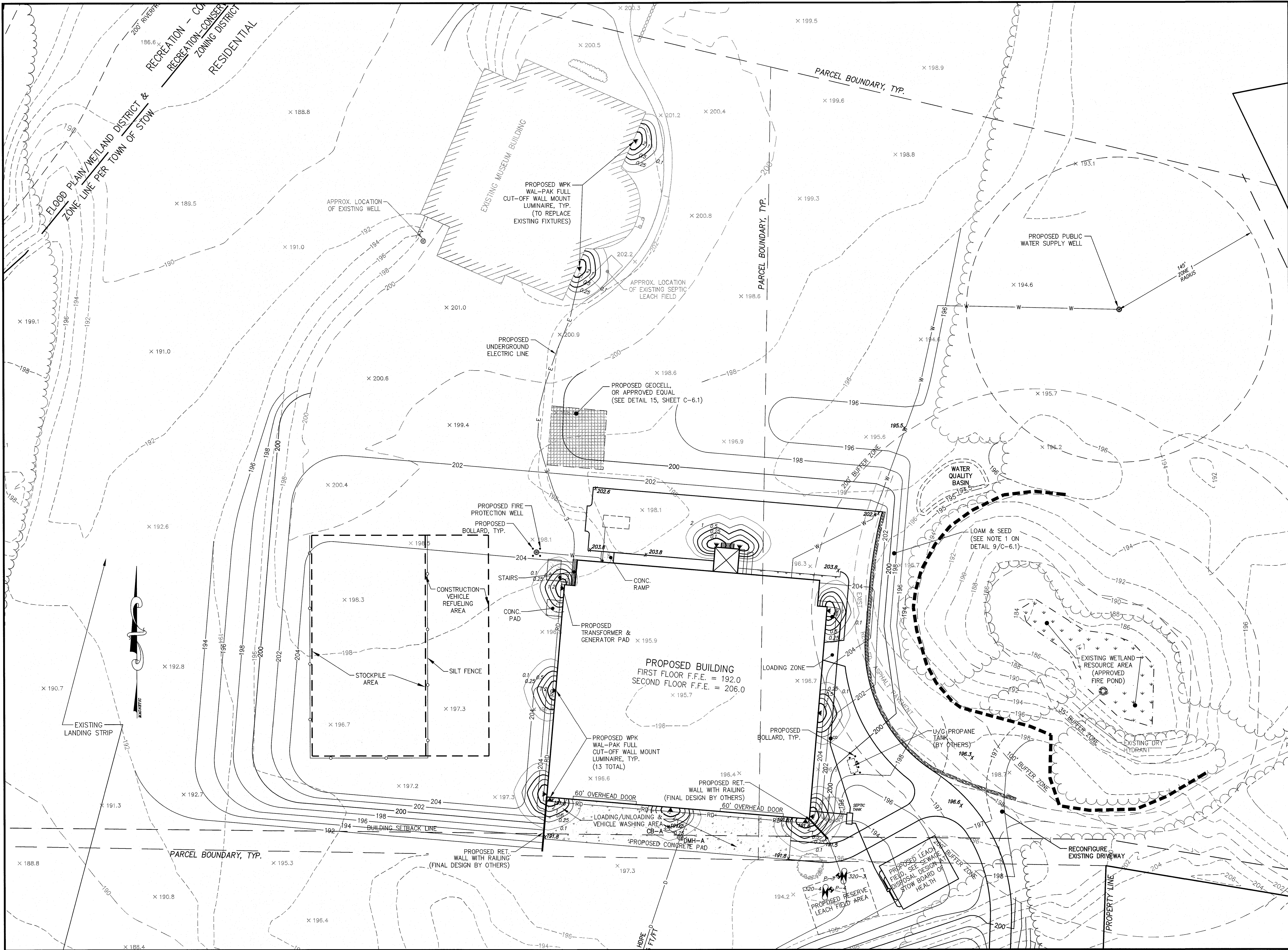
SHEET 2 OF 3



DRAWING NO.

C-6.3

PLAN NO. L-4403



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PROJECT:
THE COLLINGS FOUNDATION
SITE DEVELOPMENT PLAN
137 BARTON ROAD
STOW, MA 01775

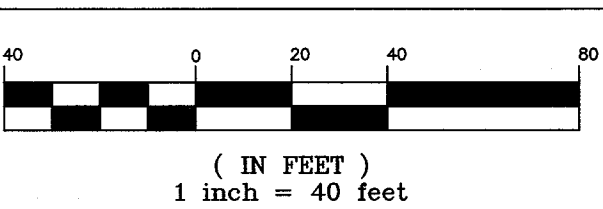
APPLICANT:
COLLINGS FOUNDATION, INC.
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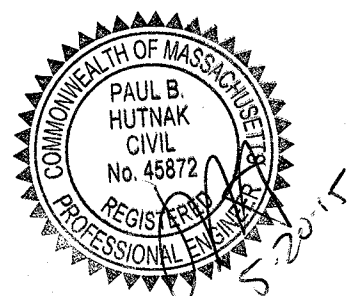
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CHECKED BY	PBH
DATE	JANUARY 20, 2015
PROJECT NO.	2014-021

GRAPHIC SCALE



SHEET TITLE

LIGHTING PLAN



DRAWING NO.

L-5.0

PLAN NO. L-4403

PLANT SCHEDULE – FULL BUILD-OUT					
PARKING AND BUILDING AREA PLANTINGS:					
SYMBOL	QTY.	BOTANICAL NAME	COMMON NAME	MINIMUM SIZE	PLANT SPACING & NOTES
ZSG	4	ZELKOVA SERRATA 'GREEN VASE'	GREEN VASE ZELKOVA	2–2.5" CALIPER	B&B, PLANT 60' ON CENTER, BETWEEN PREVIOUSLY PLANTED TREES
AFA	5	ACER X FREEMANII 'AUTUMN BLAZE'	AUTUMN BLAZE MAPLE	2–2.5" CALIPER	B&B, PLANT 40' ON CENTER
TCG	10	TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LITTLELEAF LINDEN	2–2.5" CALIPER	B&B, PLANT 42' ON CENTER
UAV	10	ULMUS AMERICANA 'VALLEY FORGE'	VALLEY FORGE ELM	2–2.5" CALIPER.	B&B, PLANT 25' ON CENTER
RLO	65	RHODODENDRON 'LITTLE OLGA'	LITTLE OLGA RHODODENDRON	18" HEIGHT	PLANT 4' ON CENTER
IGR	51	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	18" HEIGHT	PLANT 4' ON CENTER
ICS	11	ILEX CRENATA 'STEEDS'	STEEDS HOLLY	18" HEIGHT	PLANT 4' ON CENTER
HFS	48	HYPERICUM FRONDOSUM 'SUNBURST'	SUNBURST ST. JOHN'S WORT	18" HEIGHT	PLANT 3' ON CENTER
HH	70	HYPERICUM X 'HIDCOTE'	GOLDEN CUP ST. JOHN'S WORT	18" HEIGHT	PLANT 3' ON CENTER
CP	208	COMPTONIA PEREGRINA	SWEETERN	18" HEIGHT	PLANT 3' ON CENTER
JCO	56	JUNIPUS CHINENSIS 'OLD GOLD'	OLD GOLD JUNIPER	18" HEIGHT	PLANT 5' ON CENTER
RPK	36	ROSA 'PINK KNOCKOUT'	PINK KNOCKOUT ROSE	18" HEIGHT	PLANT 4' ON CENTER
SJN	24	SPIRAEA JAPONICA 'NEON FLASH'	NEON FLASH SPIREA	18" HEIGHT	PLANT 3' ON CENTER
RAG	108	RHUS AROMATICA 'GRO–LOW'	GRO–LOW SUMAC	#2 POT	PLANT 3' ON CENTER
JHB	184	JUNIPERUS HORIZONTALIS 'BAR HARBOR'	BAR HARBOR JUNIPER	#2 POT	PLANT 3' ON CENTER
JHW	114	JUNIPERUS HORIZONTALIS 'WILTON'	BLUE RUG JUNIPER	#2 POT	PLANT 3' ON CENTER
PAH	88	PENNISETUM ALOPECUROIDES 'HAMELN'	HAMELN DWARF FOUNTAIN GRASS	#2 POT	PLANT 2' ON CENTER

ASE

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Diagram illustrating the components of a landscape plan, categorized by vegetation type:

- GROUNDCOVER & PERENNIAL BEDS**: Represented by a square divided into a grid of smaller squares, with some squares containing diagonal lines.
- SHRUBS**: Represented by five stylized, rounded shrub symbols.
- SMALL ORNAMENTAL TREES**: Represented by a single stylized tree symbol with a circular canopy and a cross-shaped trunk.
- SHADE TREES**: Represented by a single stylized tree symbol with a large, circular canopy and a cross-shaped trunk.
- EVERGREEN TREES**: Represented by a single stylized tree symbol with a large, circular canopy and a cross-shaped trunk.

- 1) PLANT SPECIES, CULTIVARS, MINIMUM SIZES, AND LOCATIONS SHALL NOT BE CHANGED EXCEPT BY PERMISSION OF THE LANDSCAPE ARCHITECT.
- 2) ALL BARE SOIL AREAS THAT ARE NOT DESIGNATED AS PLANT BEDS SHALL BE SEEDED IN ACCORDANCE WITH THE SEEDING NOTES ON SHEET L-5.3.

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P.O. BOX 248
STOW, MA 01775

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NO.	DATE	DESCRIPTION
CAD FILE		
DRAWN BY		AWW
CHECKED BY		AWW
DATE		JANUARY 20, 2015
PROJECT NO.		2014-021

GRAPHIC SCALE

(IN FEET)
1 inch = 30 feet

SHEET TITLE

A circular professional seal for Alice Webb, a Registered Landscape Architect in the State of Massachusetts. The seal features the text "MASSACHUSETTS" at the top, "ALICE WEBB" in the center, and "REGISTERED LANDSCAPE ARCHITECT" at the bottom. The number "NO. 1404" is also present. A signature is written across the center of the seal.

5.2

AN NO. L-4403

